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ABSTRACT

Describing the third phase of a three-phase project designed to provide Hawaiian students with career education programs, the document focuses on training school personnel in implementing career development into existing curriculum and developing instruments for assessing student growth in career development. Inservice training was received by 286 participants in seven, separate, two-day workshops which were activity-oriented. Tests, developed for grades three, six, nine, and twelve, measure achievement categories of self-realization, economic efficiency, civic responsibility, and social relationships. Test design incorporates ease of administration and scoring, with provisions for student questions. Pilot testing occurred at each grade level and teacher evaluation was received. Recommendations for future training programs include a two level approach with careful selection of advanced level participants, and the involvement of administrators, counselors, and community representatives. Testing recommendations include data analysis, lower level test administration to low reading ability students, and incorporating tests into counseling and classroom situations. The outside evaluator, though critical of the program in many aspects, found it did meet its inservice training goals. Sixty two figures and tables are included; a list of advisory committee members, sample workshop agenda, and the tests and administrator manuals for each grade level are appended. (LH)

FINAL REPORT

Project No. V361021L
Grant No. OEG-0-73-2912

Hawaii Career Development Continuum, K-14

Conducted Under
Part C of Public Law 90-576

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SUMMARY OF THE REPORT

Time Period Covered: February 1, 1974 - June 30, 1975.

Goals and Objectives: The two major goals of Phase III were: (a) in-service training of school personnel in grades K-12 in Hawaii, and (b) development of instruments to assess student growth in career development. Subgoals of the staff training goal were to develop participants' understanding of career development as well as its importance, and to increase staff capabilities for infusing career development learning experiences into the existing curriculum. Subgoals of the instrument development goal were to develop instruments to measure students' career development growth in grades 3, 6, 9, and 12.

Procedures: In-service training was carried out through a series of seven workshops held in the fall of 1974 on four islands. Three workshops were held on Oahu, two on Hawaii, and one each on Kauai and Maui. The workshops were activity-oriented and used a variety of teaching techniques along with a multi-media approach.

A battery of four instruments to assess student growth in career development and four accompanying Administrator's Manual of Instructions were developed in fall 1974. An initial pool of items was categorized according to the objectives and subgoals of the four major goals of career development. Item analyses were made and items were combined to form the four instruments. Exploratory testing was done in fall 1974 and minor revisions were made on each inventory. The instruments were then tested in spring 1975. A pretest was administered to control and experimental groups of 3rd, 6th, 9th, and 12th grade students in April 1975. A posttest was administered in May 1975. Results from testing, analysis of teacher evaluations, and item analyses provided the basis for refinement of the four instruments.

Results and Accomplishments: In-service training was provided to 286 participants, most of whom were teaching personnel, through seven two-day workshops. Fifty-four percent of the participants reached criterion level on the posttest for acquiring career development knowledge and skills.

A battery of four instruments, each consisting of four subtests, was developed. Results from an analysis of pretests and posttests administered to 852 students in grades 3, 6, 9, and 12 indicate the instruments are valid and reliable for assessing student growth in career development. An Administrator's Manual of Instructions was developed and refined for each instrument.

Evaluation: Formative and summative evaluations were made. Self-evaluations were made of the in-service training and the instrument development. An outside evaluation was made by an independent evaluator. The results of self-evaluation are generally consistent with those of the independent evaluation. The outside evaluation generally is that the project achieved its objectives relating to in-service training and instrument development. Inadequacies were noted, particularly in regard to participant selection, and follow-through activities of the training program.

Conclusions and Recommendations: The results of the in-service program suggest the workshop format to be a viable one and point up the importance of creating an appropriate environment for learning as well as providing a set of systematically designed and logically-related learning experiences if training objectives are to be achieved. It is recommended that continued in-service training be implemented to reach all personnel in Hawaii's schools. There is a critical need for training administrative and guidance personnel, teacher trainers, and counselor educators. It is recommended that selection procedures be implemented, and that in-depth training as well as orientation to career development be provided. All training activities should be carried out as part of a single coordinated plan.

Data resulting from administration of the four forms of the Student Growth Assessment of Career Development Inventory to sample populations of 3rd, 6th, 9th, and 12th grade students in Hawaii schools indicate the instruments are suitable for assessing student growth in career development. It is recommended they be used for instructional and guidance purposes as well as for assessment of student growth in career development.

BODY OF THE REPORT

This report describes the third phase of a three-phase project designed to provide career development to learners in Hawaii schools. The Career Development Continuum Project was implemented under provisions of Part C of P.L. 90-576 for the purpose of providing a comprehensive, logically developed, rational system of career education for learners in Hawaii schools. During Phases I and II (April 1972 to June 30, 1973) a conceptual model and implementing curriculum guides (K-3, 4-6, 7-9, 10-12) were developed. Phase III (February 1, 1974 to June 30, 1975) focused on (a) training of Hawaii school personnel to implement career development concepts and principles in the existing curriculum, and (b) development of instruments for assessing student growth in the area of career development.

Problem Area

Need

The overall mission of the project has been to increase the capacity of the educational system to provide career development to all learners in Hawaii's schools. The Hawaii Career Development Continuum Project is part of the nationwide concern for changing the educational system to make it more relevant to the needs of today's youth. This nationwide concern is reflected in Hawaii's continuing concern for providing the best education possible for Hawaii's youth.

The need for career education was brought to the attention of the American public in 1971 by Sidney P. Marland, Jr., then Commissioner of Education. Academic, vocational, and technical education were not new concepts, but bringing them together under the umbrella of career education was. Marland (1971a) suggested that public education was in need of widespread revision if it was to meet the needs of all youth. Statistics bear out Marland's contention that current public education practices were failing to equip youth for personally satisfying and worthwhile participation in society:

> In 1969, 40% of the American labor force had less than a high school education. (Dunn, 1974, p. 1)
>
> In 1973 there were 900,000 public school dropouts. (Dunn, 1974, p. 1)
>
> (In 1971), the high school general curriculum generated 750,000 students who (had) neither vocational training nor who planned to go to college. (Cunha, Laramore, Lowrey, Mitchell, Smith, & Woolley, 1972, p. 1)

In a speech at the annual meeting of the State Directors of Vocational Education in Washington, D. C., in May 1971, Commissioner Marland stated:

> We have in this country the highest youth unemployment rate in the world, and the relentless advance of technology is making

the situation explosively worse. . . . By 1975 we expect the unskilled to account for less than five percent of the labor force or something in the neighborhood of 4.5 million jobs. Yet Bureau of Labor Statistics' projections indicate that we will still have more than 3.5 million young people with no salable skills trying to squeeze themselves into this sad five percent category. For them there will literally be no room at the bottom.

This tragic situation clearly indicates that America's educational efforts are failing or at least that they are not attuned to the realities of our times. If we are to correct that failure and if education is to serve properly its national purpose, then we must bridge the gulf between man and his work. We in education must be actively concerned with the boys and girls in our charge, not just until they receive a diploma, but until they have made the transition from student to worker or are enrolled in post-secondary education. Our job is not done properly, in other words, until each and every one of those youngsters is capable of developing a clear sense of direction in life and is able to make a responsible career choice. (Marland, 1971a, pp. 4-5)

Preparation for employment is only part of what career education is all about; learning the life skills of satisfying social relationships, civic responsibility, and self-realization are just as important. As Marland pointed out at the 1971 Convention of the National Association of Secondary School Principals in Houston, Texas:

It is terribly important to teach a youngster the skills he needs to live, whether we call them academic or vocational, whether he intends to make his living with a wrench, or a slide rule, or folio editions of Shakespeare. But it is critically important to equip that youngster to live his life as a fulfilled human being. . . . Life and how to live it is the primary vocation of all of us. And the ultimate test of our educational process, on any level, is how close it comes to preparing our people to be alive and active with their hearts, and their minds, and, for many, their hands as well. (Marland, 1971b, pp. 8-9)

The need for school personnel trained to deliver career education to learners is vitally important if the potential of career education is to be realized. In 1974, it was pointed out that, "the retraining of virtually every person in every educational institution in the nation" (Hoyt, Evans, Mackin, & Mangum, 1974, p. 171) is essential. Today's youth cannot successfully achieve worthwhile and meaningful career development unless teachers, administrators, and counselors are prepared to implement the basic concepts and principles of career education.

These national concerns related to career development were reflected in Hawaii's proposal in 1971 for the development of a career development continuum for grades K-14 for the state of Hawaii. The results of a 1971 needs assessment which found Hawaii's career development programs fragmented and offered in only a few schools established the need for a

systematically developed career development program for all learners. The assessment revealed: (a) a statewide conceptual framework for a comprehensive program of career education that integrated instruction, guidance, and administrative functions was lacking; (b) orientation activities to educational and occupational requirements and opportunities, which had been called for in the Hawaii Foundation Program, were offered in only a few schools; (c) counselor effectiveness was lessened by lack of a systematic information and career development instructional program; (d) counseling services relating to students' self-appraisal, self-understanding, and career development were inadequate; and (e) teachers, counselors, and administrators were not delivering career development to students as an organized and coordinated team effort.

The Hawaii Career Development Continuum Project was one of the state's efforts to meet these needs. The project proposed to help meet the needs through development of a conceptual framework of career development, development of implementing curriculum guides, provision of in-service training in career development for Hawaii school personnel, and development of instruments for evaluating student growth in the areas of career development. The conceptual framework and the curriculum guides were developed in Phases I and II. The first step, development of the conceptual framework, integrated four career development goals among the various grade levels. The curriculum guides, developed for grades K-3, 4-6, 7-9, and 10-12, presented activities for teachers and counselors to use or adapt in order to integrate career development learning experiences into their existing curriculum.

Once the conceptual framework and curriculum guides were completed, the need was to give Hawaii school personnel the opportunities to develop an understanding of career development for grades K-12. It was necessary to offer training opportunities for school personnel to better understand basic concepts and principles of career education and to develop the skills needed to integrate career development learning experiences into the existing curriculum. Objective I of Phase III, derived from this need, was to provide in-service training in career development concepts to selected school personnel of Hawaii.

It is not enough to hand teachers a curriculum guide; it is equally important to increase their understanding of the concepts and principles of career development and to help them develop the skills to utilize the guides and adapt the learning experiences into their own subject areas. The importance of and need for training has been emphasized by the National Advisory Panel of the American Institutes for Research:

> Teachers must receive in-service training in (career education), (they must) understand the importance of career education. . . . Since teachers often think of themselves as being trained in a subject matter, it is important to show them that the resources of that subject have bearing on career education. (American Institutes for Research, 1974, p. 8)

These in-service training needs were the primary focus of Phase III of the Hawaii Career Development Continuum Project. In-service training was one of the objectives of Phase III of the project.

The second objective focused on meeting another need, that of developing an instrument for assessing student growth in career development. It is not sufficient to merely develop a new curriculum; there must be some way to assess its effectiveness. Concomitant with the development of the career development curriculum, therefore, there is the need to determine the effectiveness of the curriculum in meeting career development needs of students. The need, therefore, was for an instrument to determine the extent to which the conceptual framework with the implementing curriculum guides was, in fact, viable. A survey of literature revealed that suitable instruments did not already exist. The need, then, was to develop instruments to assess student growth in areas of career development. Objective II of Phase III was the development of instruments to meet this need.

The Hawaii Career Development Continuum Project reflects and becomes part of the national thrust toward making education more responsive to the needs of today's youth. The project is one of Hawaii's efforts made in response to the U. S. Office of Education's call for "preparation of each and every pupil for meaningful work or meaningful higher education lending itself to ultimate career entry and personal fulfillment" (Marland, 1972, p. 35).

Related Literature

Career education literature becomes more abundant daily. Since 1971 when Marland introduced the term, innumerable private, public, and commercial organizations and agencies have made available literally thousands of career education books, reports, newsletters, films, filmstrips, study guides, and teacher aids. A continuing effort has been made throughout all phases of this project to review results from related projects in career education and career development. Reports emanating from projects throughout the nation have been regularly reviewed and results have been related to the Hawaii Career Development Continuum Project.

Research, development, and training efforts of the U. S. Office of Education, state department of education, laboratories, centers, and private agencies have contributed to the project. Reports have been analyzed on a continual basis from the Center for Vocational and Technical Education at Ohio State University, the ERIC Clearinghouse on Career Education at Northern Illinois University at De Kalb, the Far West Laboratory for Educational Research, the American Institutes for Research, the Educational Testing Service, the Career Development Guidance, Counseling and Placement Project at the University of Missouri, and the Northwest Regional Educational Laboratory. The reports from organizations, universities, and state agencies throughout the nation have been reviewed routinely. In conducting Phase III of the Hawaii Career Development Continuum Project, a concerted effort was made to review literature in two areas: staff development and instrument development.

Literature Related to Objective 1: In-Service Staff Training. Of all materials reviewed, the most significant in terms of having a bearing on the in-service staff training component of the Hawaii Career Development Continuum Project include reports by Norton (1972), Drier and Jacobsen (1973), Drier (1974b), Ryan (1973a, 1973b), Trenton State College (1972), and Nelson (1974).

Reports related to staff training from the Comprehensive Career Education Model (CCEM) Project conducted by the Center for Vocational and Technical Education at Ohio State University included those by Norton (1972), Drier and Jacobsen (1973), and Drier (1974b). Norton stressed the importance of adequately preparing the staff for the roles they will be required to play in a career education program. This includes orienting and training staff in the philosophy and basic concepts of career education. The CCEM recommends that two staff groups be established: a Staff Development Cadre, members of which would be responsible for designing and conducting additional in-service sessions on a wide-scale; and a Building Coordinator group, members of which would be responsible for in-service activities in their respective buildings. While the Hawaii Career Development Continuum Project did not follow the exact outline of the CCEM Project, it did incorporate many of the same underlying staff training principles.

Drier and Jacobsen (1973) conducted and reported on a major study for the Comprehensive Career Education Model Project at the Center for Vocational and Technical Education. The authors stress the need for in-service training and have as their major focus an inherent problem in the implementation of career education, that of how to effectively deal with teachers who resist change. The authors recommend assessing where teachers are on a continuum of acceptance - resistance to change, assigning them to like groups, and then tailoring in-service activities specifically to each group. The Hawaii Career Development Continuum agreed with the importance and need for staff in-service training stated by the authors. However, instead of providing a variety of training sessions with participant selection procedures, the Hawaii Project offered a series of orientation workshops open to all Hawaii public school personnel in grades K-12. The limit on funds to support the Hawaii Project precluded the possibility of the more comprehensive and controlled approach. The orientation workshops conducted as part of the Hawaii Project represented only one component in the total state plan for staff training.

Drier (1974b) reports on materials originating from the CCEM Project for conducting staff development in career education. The Hawaii Career Development Continuum followed the design of many of the training programs and products of the CCEM Project. Like the CCEM Staff Development Guidelines, the Hawaii Continuum used a staff development model. The CCEM Project places more emphasis on staff needs assessment and employs a different evaluation method. The Hawaii Project utilizes a staff development program much like that of the CCEM, in that both give sample lessons with performance objectives and goals, learning activities, lesson-related resources, and evaluation activities. Unlike the CCEM, the Hawaii Project did not utilize a community resource program, self-instructional materials, or an attitude change in-service program as components in the orientation workshops.

One of the major sources used by the Hawaii Career Development Continuum Project were the references related to the Adult Career Education in Corrections Program conducted by the University of Hawaii. Ryan (1973a, 1973b), director of the program, reports on methods, goals, and purposes of the program. One of the major differences between the two programs was in the method of staff training. Like the Comprehensive Career Education Model of the Center for Vocational and Technical Education, the Adult Career Education in Corrections Program utilized a two-level staff training model, whereas the training in the Hawaii Career Development Project was limited to orientation. However, the emphasis placed on participant involvement as an integral and crucial part of a successful career education program is inherent in both programs.

In 1972, Trenton State College published a guide to available career education in-service teacher training programs. A wide variety of training programs are described, and most employ methods and activities similar to those of the in-service staff training component of the Hawaii Career Development Continuum Project. Most programs have participants working in task groups, attending lectures, participating in discussions, viewing films, reviewing career development/education instructional materials, and reading assigned reference materials. Many of the programs listed in this publication also employ self-evaluation techniques similar to those used by the Hawaii Career Development Continuum.

In 1973, the University of Bridgeport in Connecticut (Nelson, 1974) initiated a project to develop and implement three interrelated career education models. The first model focused on promoting and strengthening relationships among the business, educational, and industrial sectors of a community. The second model focused on K-12 teachers, and the third focused on developing a career education resource center. The Hawaii Career Development Continuum Project did not include community personnel to the extent the first model of the Connecticut Project did. In the second model, an individual, in-classroom approach was used, whereas for the Hawaii Career Development Continuum Project it was felt a concentrated, two-day, group-centered training approach would be more effective. The development of a career education resource center for staff was not incorporated into the Hawaii Project since a Career Information Center has been established in Hawaii.

Literature Related to Objective 2: Development of Instruments for Student Growth Assessment. A comprehensive search of available career development instruments revealed a number of tests and inventories which were relevant; however, no single instrument or technique completely and adequately met the project needs. Thus, instruments had to be developed and techniques selected to meet specific project needs.

The Career Education Survey, developed by Behavioral Consultants (n.d.), is a screening instrument designed to provide general feedback regarding career education needs and programs. It provides a needs assessment, diagnostic data, and is prescriptive. The Hawaii Career Development Inventory, like the Career Education Survey is not an achievement test, but instead gathers information from students regarding attitudes, knowledge, and experience in the area of career development, and can be used to gather data from any size group of students.

The Hawaii Career Development Inventory is not prescriptive since other needs areas are presently emphasized by the project.

The Career Maturity Inventory (Crites, 1973) was one of the instruments found to be most applicable to project needs. Two sections of the Career Maturity Inventory were adapted for use in the Hawaii Career Development Inventory, those of self-appraisal and occupational information. However, other sections of the Career Maturity Inventory were not applicable to or did not meet project needs, thus the instrument as a whole could not be used.

Clapsaddle (1973) reports on a study utilizing the Career Maturity Inventory to determine the relationship of career education teacher in-service preparation to the vocational development of 6th grade children. The testing design used by Clapsaddle was also used by the Hawaii Career Development Continuum Project: the respective project instruments were administered to both control and experimental groups, the experimental groups were composed of students of teachers who had received in-service training, control groups were composed of students of teachers who had not received training, and pre- and posttests were administered.

The Assessment of Career Development available from Houghton-Mifflin is designed for use in grades 8-11, thus had limitations for use by the Hawaii Career Development Continuum Project as the latter was concerned with testing students in grades 3, 6, 9, and 12. However, the testing models used by both projects are similar in that both call for control and experimental groups to be pre- and posttested using the same instrument for both tests.

Also available from Houghton-Mifflin is the Career Planning Program for grades 8-11. This instrument is designed to assess student experiences, interests, and abilities, and help the student identify and explore career options. This instrument was not applicable to the Hawaii Career Development Continuum Project needs since the focus was on assessing student growth in career development and the effects on student growth of in-service training of school personnel and exposure to the experiences in the Hawaii Career Development Continuum Curriculum Guides. As student interests or self-estimates of ability were not the primary focus it was not possible to utilize the Career Planning Program instrument.

The Differential Aptitude Test developed by Bennett, Seashore and Wesman (1974) was not applicable to the Hawaii Career Development Continuum as the Hawaii Project is concerned with measuring total career development effects of the Continuum on the student, rather than being limited to student aptitudes.

Materials available from the Comprehensive Career Education Model Project at the Center for Vocational and Technical Education were not applicable. Drier (1974a) reports on assessing community resources and local needs, and the Hawaii Career Development Continuum was concerned with developing an instrument for use with students.

Many of the materials available from the Achievement Competence Training (ACT) Project (Brandes, 1974; Buckingham, Davis, Kekalos, 1974) were not applicable, although some of the methods used by ACT were. ACT field testing procedures were similar to those employed by the Hawaii

Career Development Continuum Project, although specific testing techniques differed. The ACT utilized interviews and anecdotal reports. Because of time and personnel required to utilize these methods with a significant number of students, the Hawaii Project elected not to use this approach.

The designs which were devised for in-service training and instrument development were built on findings from related works in these areas, and, at the same time, incorporated factors to meet the unique needs of Hawaii.

Goals and Objectives

Phase III of the Hawaii Career Development Continuum Project had three aims.

Aim 1: Training of personnel in use of systems approach to plan, implement, and evaluate delivery systems for career development for all learners, K-14, in Hawaii.

- Goal 1: To develop workshop participants' understanding of career development and to increase their capabilities of infusing career development into the existing curriculum.
  - Subgoal 1: For workshop participants to understand the basic concepts and principles of career development.
  - Subgoal 2: For workshop participants to understand the importance of and be motivated to utilize career development learning experiences in the classroom.
  - Subgoal 3: For workshop participants to develop the skills necessary to identify career development learning experiences which can be used in existing curriculum.

Aim 2: Development and testing of career development instruments appropriate for the learners and compatible with the socio-economic cultural setting in Hawaii.

- Goal 1: To develop an instrument to assess career development growth of students in grade 3.
- Goal 2: To develop an instrument to assess career development growth of students in grade 6.
- Goal 3: To develop an instrument to assess career development growth of students in grade 9.
- Goal 4: To develop an instrument to assess career development growth of students in grade 12.

Aim 3: Revision of the conceptual model and implementing curriculum guides.

Project Design and Procedures

Activities Related to Objective 1: In-Service Staff Training

Training Design. Design of the in-service training package was based primarily on the training design of the six-year national program of Adult Career Education in Corrections (Ryan, 1973a), the California Development Model (Cunha, Laramore, Lowrey, Mitchell, Smith, & Woolley, 1972), and the model of the American Institutes for Research (Dunn, 1974).

The six-year Adult Career Education in Corrections (ACEC) Program trained personnel in 45 states, 4 territories, the District of Columbia, and Canada. Personnel training in the ACEC Program was offered through an articulated program of basic and advanced seminars to equip participants for subsequent leadership roles and training and technical assistance responsibilities at the local and regional level. The training program design produced a multiplier effect through the two-level training model which produced technical assistance teams. Those trained in the basic seminars were equipped with basic skills and knowledge needed to implement career education programs, and to function as members of teams which provided technical assistance or training in their local settings. Participants were chosen from the basic seminar trainees for advanced training. Those who completed the advanced training were equipped with competencies to assume responsibilities of team leaders and with knowledge and skills to provide technical assistance or training on a regional level. This two-level training design sets in motion a process which supplies trained personnel who train other personnel, who train still others, thus achieving the multiplier effect by having trainers in each institution, capable of carrying on in-service training at the local unit level.

The Hawaii Career Development Continuum training activities chosen were similar to those recommended by the American Institutes for Research (Dunn, 1974) in that the workshops were the same length, two days, and used similar formats. The AIR Workshops, "typically involved opening remarks by school district leaders, . . . extensive career education materials displays, and workshop-type activities" (Dunn, 1972, p. 31). Although the AIR Workshops contained cadre teacher involvement as activity leaders, the Hawaii Career Development Continuum did not have a cadre of previously trained teachers, but did utilize participants as chairpersons and recorders at each workshop.

The Hawaii Career Development Continuum training activities chosen were also similar to those utilized by the California model (Cunha, Laramore, Lowrey, Mitchell, Smith, & Woolley, 1972), in that there were no selection procedures, but rather, voluntary participation by school staff members. It was felt,

> that the most effective volunteers were school staff members who were willing to accept the risks of innovation and the extra work involved in relating classroom activities and group guidance activities to learning about occupations and varied life styles. (Cunha, Laramore, Lowrey, Mitchell, Smith & Woolley, 1972, p. 26)

In addition, the California model,

> included an opportunity for staff members to work as teams and to have an opportunity to "brainstorm" the kinds of experiences they might organize to enable students to discover and understand the basic career development concepts. (p. 26)

The training model utilized by the Hawaii Career Development Continuum also incorporated opportunities for participants to work together as members of teams and to brainstorm experiences that might be organized in their classrooms.

The Hawaii Career Development Continuum Project utilized only the basic training portion of the ACEC training design. The design for the Hawaii training was a two-day workshop which was based upon the basic training portion of the ACEC Program. There were seven steps in the model developed: (a) analysis of the real-life environment, (b) a statement of the ideal, (c) assessment of needs, (d) definition of goals, subgoals, and objectives, (e) formulation of a training plan, (f) program implementation, and (g) evaluation. Figure 1 illustrates the Hawaii Career Development Continuum's training model.

Analyze Real-Life Environment (1.0)
- Analyze Workshop Setting (1.1)
- Analyze Participant Population (1.2)
- Analyze Workshop Functions (1.3)

State the Ideal (2.0)
- State the Philosophy (2.1)
- Describe Ideal Workshop Setting (2.2)
- Describe Ideal Participant Population (2.3)
- Describe Ideal Workshop Functions (2.4)

Assess Needs (3.0)
- State Participant Needs (3.1)
- State Program Needs (3.2)
- Rank Order Needs (3.3)

Define System Goals/Subgoals/Objectives (4.0)
- Define Concepts (4.1)
- Define Management Goals/Subgoals/Objectives (4.2)

Formulate Plan (5.0)
- State Mission/Parameters (5.1)
- State Constraints/Resources (5.2)
- Synthesize Possible Solutions (5.3)

Develop/Implement Program (6.0)
- Provide Management Support (6.1)
- Develop Curriculum (6.2)
- Implement Program (6.3)

Evaluate System (7.0)

Figure 1. Outline of model developed for the Hawaii Career Development Continuum Project's in-service staff training.

In analyzing the real-life environment (1.0), information was gathered in three areas: (a) the workshop settings, (b) the participant population, and (c) the workshop functions. The workshop setting refers to: support services, including physical facilities, food, and clerical services; social factors affecting the interaction of the participants; and the community in which the workshop is held, including resources, accessibility, and costs. The participant population was analyzed according to their training and background. Workshop functions refer to activities needed to implement the workshop; and were either participant-related functions or management-related functions.

Step 2 involved stating the ideal (2.0), in terms of philosophy, settings, participants, and functions of the workshop. The philosophy statement which gave direction to the workshops was:

> We believe that all participants can develop and be committed to incorporating career development into the school curriculum and that staff has the responsibility to provide optimal resources to help participants to realize this potential.

The description of the ideal workshop setting helped to identify criteria against which to measure practical workshop settings. Describing the ideal participants helped to identify guidelines for the best participant balance.

Step 3 involved comparing the real-life situation against the ideal, thus revealing needs (3.0). Participant needs included learning needs, social needs, need for adequate support services, needs for an environment conducive to learning, and needs for learner-involvement activities. Program needs included participant selection, pre-workshop indoctrination, and post-workshop communication.

Once the needs were identified, the training mission was implemented in goals, subgoals and objectives for the workshop participants (4.0).

The next step was the formulation of the plan for the workshop. Parameters, constraints, and resources were considered and a plan was then chosen. The outline of the workshop agenda is attached as Appendix E.

Upon selection of the plan, the curriculum for the workshop was developed and arrangements made for the services required: materials and activities for the workshop were developed, workshop sites and facilities were selected, and resource persons to serve as panelists and speakers were selected.

The last step, evaluation (7.0) was the process of determining the efficiency and effectiveness of the total system design. Evaluation forms were developed for distribution to workshop participants for their evaluation of the workshop's effectiveness and value to each.

Training Procedures. The actual procedures used at the Hawaii Career Development Continuum Project Workshops were as follows:

Settings and Dates: In 1974, seven workshops were given, three on Oahu and four on outer islands. Dates and places of the workshops were:

October 18-19	for Windward District held at Ulu Mau Village
October 25-26	for Kauai District held at Kauai Beachboy Hotel
November 1-2	for Honolulu District held at Ala Moana Banquet Hall
November 8-9	for Hawaii District (Hilo) held at Hilo Lagoon Hotel
November 15-16	for Hawaii District (Kona) held at Kona Lagoon Hotel
November 22-23	for Leeward and Central Districts held at Leeward Community College
December 6-7	for Maui District held at Maui Community College

The workshops originally were scheduled for alternate weekends, but rescheduling due to printing delays caused the workshops to be held on six successive weekends with Thanksgiving intervening before the seventh workshop.

Participants: In September 1974, notices and enrollment forms for the workshops were sent to district coordinators appointed by the Department of Education. The district coordinators were responsible for distributing information to all school personnel in their districts. Enrollment forms were to be returned two weeks ahead of workshop dates so that materials and final arrangements could be made.

Program: The workshop activities were scheduled from 3:30 p.m. to 10:30 p.m. on Friday and from 8:00 a.m. to 4:30 p.m. on Saturday. The program included individual, small group, and large group activities. Audio visual materials were used in connection with a variety of teaching techniques, including lecture, discussion, role playing, and simulation. The workshop opened with a meeting of the large group followed by a task activity session in small groups, after which reports, discussion, and evaluations were held in the large group. Large group activities included a film, banquet, a keynote speech, an address on the conceptual model, a panel discussion, and task group reports. Small group activities included task assignments on communication, assumptions undergirding career development, cooperation, and infusing career education into lesson plans. Individual activities included readings on career development, an assignment on career development instructional guidance materials, and assigned program responsibilities.

Staff: The principal investigator and 2 assistants comprised the staff for seven workshops. A guest speaker attended each workshop. Two to four teachers, counselors, and/or administrators were chosen from each district as panelists at the workshops.

Activities Related to Objective 2: Development of Instruments for Student Growth Assessment.

The Hawaii Career Development Inventory was constructed by establishing an instrument construction design, developing items, testing, refining, and synthesizing an inventory.

Construction of Preliminary Instruments. Initial consideration was given to possible approaches to instrumentation: the multi-instrument vs. single instrument, objective vs. non-objective, pictorial vs. word, and multichotomous vs. dichotomous. The decision was made to use four forms of a single instrument with each form designed for a specified grade level. It was decided that the inventory would be an objective, paper-and-pencil instrument. The choice of this approach to instrumentation was based on the fact that a single instrument alleviates the problem of establishing theoretical and empirical linkages between instruments, and also avoids the problem of scoring when different dimensions are used for different instruments. The preference for an objective instrument, as opposed to a subjective measure, was based on the assumption that objective instruments can be administered more easily and scored more economically, with less chance for error than is the case with subjective tests. A word statement instrument, as compared to pictorial stimuli, has the advantage of minimizing the margin of errors, since there is less chance for ambiguity.

The development of items for the four forms of the career development inventory was accomplished by establishing and then drawing from an initial pool of career development statements and items obtained from three sources: (a) published tests and inventories, (b) books and articles, and (c) item writing. The first step in item construction was the screening of items on the basis of relevancy, uniqueness, and specificity. Items which failed to measure up to these criteria or which were duplicate items were eliminated, rewritten, revised, or refined. In item construction, an effort was made to obtain as pure a measure of the dimension or subgoal as possible. Items which were ambiguous or vague were revised. The inventory was designed to provide as nearly as possible an equal number of positive and negative items to counteract effects of acquiescent response set. After faulty items were eliminated, the remaining items were categorized by career development goal, subgoal, and objective.

The next step was writing additional items to provide an equivalent set of stimuli at each level for eliciting responses related to the twenty-four subgoals defined in the conceptual framework of career development for Hawaii's public schools. The preliminary version of the inventory by intent had more items than would be included in the final version, to allow for elimination of faulty items. In the preliminary version, each inventory had four subtests, one for each goal area, with a possible score of 110 points.

The inventory had four forms, one for each grade level. All forms were for group administration. Forms B, C, and D were designed so students could read the items and record their responses on the inventory booklets. Form A, for administration to 3rd graders, was designed for the items to be read orally by the teacher. Students responded by circling yes or no for each item on the answer sheet. The four forms of the Inventory, A, B, C, and D, therefore had four parts, 1, 2, 3, and 4. In each form Part 1 consisted of items to sample self-realization achievement, Part 2 sampled economic efficiency achievement, Part 3 sampled civic responsibility achievement, and the fourth part, was to sample students' social relationship skills.

Because of reading limitations of learners in Kindergarten to Grade 3, the oral administration technique was selected for this level. The instrument provided a report form on which the learners could record their responses with a minimum of trouble. For the other three levels, the instruments were designed for easy recording of responses directly on the test booklets. Both multiple choice and true/false items were included in the preliminary version.

In constructing the inventory, care was taken to produce an inventory which would satisfy the demands for ease of administration. The inventory was not a power test. It was felt that respondents should not be penalized because of having relatively slow reading rates. Provision was made for respondents to ask questions of the administrator in cases where there was a lack of understanding about the meaning of words in the items. It was found, that most students could complete the inventory in 45 minutes to one hour. Each form had a set of Directions for Administration and Scoring.

Exploratory Testing of Instrument. Upon completing the four primary versions of the inventories, exploratory testing was done on the items. Items were revised or deleted to implement the results of the exploratory testing and the recommendations and comments of professional staff and an outside consultant. The preliminary versions were then reviewed by two specialists in the State Department of Education and one outside evaluator. Additional revisions were made to implement recommendations made.

Pilot Testing of Instruments. Schools were identified for pilot testing the instruments at grades 3, 6, 9, and 12. The design was pre-post experimental control groups. Teachers were assigned to experimental and control groups. Two field supervisors were responsible for distribution and collection of data. The testing design called for one experimental and one control group in each of the following schools, and two in each of the schools marked with an asterisk:

Grade 3: Fern, Kuhio, Maile, Makaha, Holualoa, Kealakehe
Grade 6: Fern, Kuhio, Maile, Makaha, Kealakehe, Konawaena
Grade 9: Central, Jarrett, Kaimuki, Washington, Nanakuli, Waipahu, Konawaena*
Grade 12: Kaimuki*, Nanakuli, Waipahu, Konawaena*

However, due to malfunctions in printing and a concomitant delay in instrument distribution, it was necessary to revise the training design as follows:

Grade 3: Fern, Konawaena, Kuhio, Maile
Grade 6: Konawaena, Kuhio, Maile, Puuhale
Grade 9: Central, Jarrett, Konawaena, Nanakuli, Waipahu
Grade 12: Kaimuki*, Konawaena, Nanakuli, Waipahu

The instruments, directions for administration, and teacher evaluation forms were distributed to participating schools for the pretest which was administered in April to a sample population. In May, using the same procedures as for the pretests, posttests were administered to students in grades 3, 6, 9, and 12.

As part of the pilot testing of the instrument, teachers were required to evaluate the instrument and also to rate each item on the instrument. Results of pre- and posttests and teacher evaluations were treated statistically.

Refinement and Synthesis of Final Instrument. Based on results from the analysis of results from pre-posttests, experimental and control groups, and teacher ratings, the instrument was refined.

Results and Accomplishments

Results and Accomplishments Related to Objective 1: In-Service Staff Training.

Participants. Three hundred persons returned completed enrollment forms for the seven two-day workshops. Fourteen of the 300 applicants withdrew, leaving a total of 286 participants. In addition, four panelists participated during the morning session of each workshop. Table 1 shows a breakdown of the participants at each workshop by sex, age, and education.

Table 1

Participant Sex, Age, and Education by Workshop Location

Participant Characteristics	Workshop Location							Total
	Windward	Kauai	Honolulu	Hilo	Kona	Leeward	Maui	
Sex								
Male	12	9	23	11	21	8	14	98
Female	36	33	31	23	37	14	14	188
Total	48	42	54	34	58	22	28	286
Age								
20 - 24	1	0	1	2	5	1	1	11
25 - 29	5	12	10	8	11	9	6	61
30 - 34	5	10	4	7	11	4	3	44
35 - 39	9	6	6	4	13	2	6	46
40 - 44	13	4	14	4	8	1	3	47
45 - 49	8	6	9	3	3	1	3	33
50 - 54	4	2	6	0	2	0	3	17
55 - 59	1	2	3	3	1	3	1	14
60 - up	0	0	0	1	0	0	0	1
Total	46	42	53	32	54	21	26	274
No Response	2	0	1	2	4	1	2	12
Median Age	41.5	33.5	42.0	34.5	35.5	29.5	37.5	37.0
Education								
Less than BA	1	0	0	0	0	0	1	2
BA	29	32	26	27	46	12	24	196
MA	17	8	21	6	11	10	3	76
Ph.D.	1	1	7	0	0	0	0	9
No Response	0	1	0	1	1	0	0	3
Total	48	42	54	34	58	22	28	286

Inspection of Table 1 shows that nearly twice as many women as men attended. Only at the Maui workshop did the men equal the women in numbers. In age, the Leeward workshop had the youngest group, and Windward and Honolulu the oldest groups. Nearly 30% of the participants held advanced degrees, with over half of this 30% represented by participants in the Windward and Honolulu workshops.

Table 2 presents the employment classifications of the workshop participants.

Table 2

Participant Employment by Workshop Location

Employment Classification	Workshop Location							Total
	Windward	Kauai	Honolulu	Hilo	Kona	Leeward	Maui	
Teachers								
K - 3	9	13	3	9	18	0	3	55
4 - 6	7	11	5	5	16	2	3	49
7 - 9	3	3	9	0	6	2	3	26
10 - 12	4	9	10	9	6	5	14	57
Library	1	1	0	0	0	0	0	2
Special Education, Elementary	2	0	2	0	2	0	0	6
Special Education, Secondary	5	0	1	0	0	1	0	7
Diagnostic Prescriptive	3	0	0	1	0	0	0	4
Total	34	37	30	24	48	10	23	206
Counselors								
Elementary	0	1	0	0	2	0	0	3
Secondary	3	0	4	4	3	3	2	19
Total	3	1	4	4	5	3	2	22
Administrators								
Elementary	4	0	0	0	2	1	1	8
Secondary	0	0	3	1	1	0	0	5
Total	4	0	3	1	3	1	1	13
District Office Specialists	2	4	0	5	1	0	2	14
Department of Education Specialists	4	0	2	0	0	1	0	7
University of Hawaii								
Faculty	1	0	14	0	0	1	0	16
Students	0	0	1	0	1	6	0	8
Total	1	0	15	0	1	7	0	24
Total Participants	48	42	54	34	58	22	28	286
Total Withdrawals	2	4	1	2	1	0	4	14
Total Applicants	50	46	55	36	59	22	32	300

Table 2 shows that the majority of participants were teachers. Teachers were in heavy majority at Kauai and Kona. Leeward was the only workshop at which teachers were not in the majority. A comparison of Table 2 with Table 1 leads to the conjecture that the relatively young median age at Leeward was due to the fact that over a quarter of the Leeward participants (27%) were University of Hawaii students. Further investigation proved this untrue; the average age of the six students was exactly the same as the median age of the entire group. Kauai and Kona teachers were predominently elementary school teachers, while Leeward and Maui teachers were predominently high school teachers. A preponderance of elementary teachers was expected at Kona, since the workshop date fell on the homecoming weekend for the largest high school in the Kona area. Representation from intermediate schools was light for all the workshops except Honolulu. Counselors were mostly secondary counselors. District office representation was particularly strong in Kauai and Hilo. Department of Education representation occurred only at the Oahu workshops, with a majority of the Department of Education participants attending the Windward workshop. University of Hawaii was represented mainly at Honolulu and Leeward, with representation primarily by faculty at Honolulu and by students at Leeward.

Participant Self-Evaluation. Participants' self-evaluation was made to determine the extent to which participants felt they had achieved the program goals: understanding career development concepts and principles, and development of skills for infusing career development into the existing curriculum. Table 3 gives the results of the self-evaluation.

Inspection of Table 3 reveals that over 80% of the participants at Windward, Kauai, Hilo, Kona, Leeward, and Maui felt they had succeeded in acquiring understanding of career development concepts and principles through participation in the workshop. Over 80% of participants in Windward, Kauai, Hilo, Kona, and Maui felt they had acquired skills for implementing career development in the classroom. For all seven workshops, 89.25% of the 286 participants felt they had acquired the necessary knowledge, while 2.85% felt they had not. In the area of developing skills, 88.12% of all the participants felt they had succeeded in developing the necessary skills, while 3.11% felt they had not. There was little difference between participants' estimate of knowledge increase and skill development.

Participants self-evaluation also included ratings of the achievement of objectives which implemented the major goals. Ratings were given of the extent to which major concepts were acquired and primary skills developed, as well as an assessment of professional competencies developed. The results of the participant ratings on a scale of 1 to 4 of the achievement of these training objectives are given in Table 4.

Table 3

Percent of Participants Acquiring Career Development Knowledge and Skills by Self-Evaluation

Workshop	Acquired Knowledge at Criterion Level	Developed Skills at Criterion Level	Combined Knowledge and Skills
	Percent	Percent	Percent
Windward			
Did acquire	83.33	83.33	83.33
Did not acquire	0.00	2.08	1.04
No response	16.67	14.56	15.63
Kauai			
Did acquire	92.85	95.23	94.04
Did not acquire	0.00	2.38	1.19
No response	7.15	2.38	4.77
Honolulu			
Did acquire	77.77	72.22	75.00
Did not acquire	5.55	7.40	6.47
No response	16.68	20.38	18.52
Hilo			
Did acquire	94.11	94.11	94.11
Did not acquire	0.00	2.94	1.47
No response	5.89	2.94	4.42
Kona			
Did acquire	93.10	98.27	95.69
Did not acquire	1.72	1.72	1.72
No response	5.18	0.00	2.59
Leeward			
Did acquire	94.74	73.68	84.21
Did not acquire	5.26	5.26	5.26
No response	0.00	21.06	10.53
Maui			
Did acquire	88.88	100.00	94.44
Did not acquire	7.40	0.00	3.70
No response	3.72	0.00	1.86
M Percentages for 7 Workshops			
Did acquire	89.25	88.12	88.69
Did not acquire	2.85	3.11	2.98
No response	7.90	8.77	8.33

Table 4

Participant Self-Evaluation of Achievement of Training Objectives
by Workshop Location

Achievement of Training Objectives	Workshop Location							M Rating
	(n=45) Windward X	(n=43) Kauai X	(n=43) Honolulu X	(n=34) Hilo X	(n=57) Kona X	(n=15) Leeward X	(n=27) Maui X	
Knowledge Acquired								
1. Increase in the understanding of career development	3.40	3.67	3.60	3.79	3.75	3.80	3.62	3.66
2. Increase in the understanding of the Hawaii Career Development Continuum	3.36	3.32	3.39	3.55	3.40	3.46	3.25	3.37
3. Increase in the understanding of the Career Development Curriculum Guides	2.97	3.13	3.23	3.41	2.92	3.26	3.33	3.17
Skills Developed Development of skills necessary to develop relevant career development learning experiences	3.17	3.39	3.20	3.57	2.92	3.40	3.40	3.29
Professional Competencies Developed Increase in personal and professional growth	3.28	3.60	3.20	3.76	3.64	3.53	3.62	3.51
M Ratings	3.22	3.42	3.34	3.62	3.33	3.49	3.45	3.40

* scale = 0.0 (slight) to 4.0 (very much)

Inspection of Table 4 reveals that overall, participants indicated they had significantly increased their understanding of career development concepts. In each workshop the self-evaluation showed greatest achievement in the understanding of career development. With the exception of Maui participants, the development of understanding of the Hawaii Career Development Continuum was in second place in the order of objectives accomplished to implement the goal of increasing understanding of basic career development concepts. All participants, except at Maui, rated their understanding of the Career Development Curriculum Guides at a lower level than understanding of basic concepts or understanding of the career development continuum.

A secondary objective for the workshop was to increase participants' professional role competencies. The self-rating by participants of accomplishment of this objective, as reported in Table 4, reveals a significant achievement in all workshops except Windward and Honolulu. In these two workshops, there was achievement of the professional growth objective, but the level of achievement was less than at the other workshops. Windward and Honolulu reported a mean rating of 3.28 and 3.20, respectively, compared to a mean of 3.63 for the other five workshops.

Objective Tests. The extent to which training objectives were achieved was also assessed by an objective test. The training mission was for participants to reach a 70% criterion level on tests of knowledge and skills. Table 5 shows the results of this objective evaluation of the participants' acquisition of knowledge about career development concepts and development of skills for infusing career development into the curriculum.

Table 5

Participant Scores* on Tests of Career Development Knowledge and Skills by Workshop

Test	Workshop Location							M
	Windward	Kauai	Honolulu	Hilo	Kona	Leeward	Maui	
Knowledge	4.96	8.22	8.22	7.36	6.62	6.00	7.40	6.97
Skill	6.42	7.21	6.61	7.56	6.52	5.56	6.44	6.61
Total	11.38	15.43	14.83	14.92	13.14	11.56	13.84	13.58

* Possible Score = 10 points each test

Inspection of Table 5 shows the mean score for all seven workshops to be close to 70% for knowledge, 66% for skill, and almost 68% for knowledge and skills combined. This is slightly below criterion level of 70%. All except Windward, Kona, and Leeward reached criterion level on knowledge acquisition; only Kauai and Hilo met criterion level on skill development.

Table 6 shows the percentage of participants in each workshop reaching criterion level on the tests over acquisition of knowledge and development of skills.

Table 6

Percent of Participants Acquiring Career Development Knowledge and Skills by Objective Tests

Workshop	Acquisition of Knowledge at Criterion Level	Development of Skills at Criterion Level	Total
	Percent	Percent	Percent
Windward			
Did reach Criterion Level	22.92	64.58	43.75
Did not reach Criterion Level	54.16	35.42	44.79
No response	22.92	0.00	11.46
Kauai			
Did reach Criterion Level	73.81	71.43	72.62
Did not reach Criterion Level	26.19	28.57	27.38
No response	0.00	0.00	0.00
Honolulu			
Did reach Criterion Level	44.45	59.26	51.86
Did not reach Criterion Level	22.22	35.19	28.70
No response	33.33	5.55	19.44
Hilo			
Did reach Criterion Level	58.82	82.35	70.59
Did not reach Criterion Level	35.29	17.65	26.47
No response	5.89	0.00	2.94
Kona			
Did reach Criterion Level	60.34	56.90	58.62
Did not reach Criterion Level	39.66	43.10	41.38
No response	0.00	0.00	0.00
Leeward			
Did reach Criterion Level	50.00	13.63	31.82
Did not reach Criterion Level	36.36	59.09	47.72
No response	13.64	27.28	20.46
Maui			
Did reach Criterion Level	46.43	53.57	50.00
Did not reach Criterion Level	32.14	42.86	37.50
No response	21.43	3.57	12.50
M Percentages for 7 Workshops			
Did reach Criterion Level	50.96	57.39	54.18
Did not reach Criterion Level	35.15	37.41	36.28
No response	13.89	5.20	9.54

Inspection of Table 6 shows close to a normal distribution across workshops for results of both knowledge and skill tests. Of the participants at Kauai, 74% met criterion level in the knowledge test compared to only 23% at Windward. The percentage of participants meeting criterion level at the other workshops were 60%, 59%, 50%, 46%, and 44% at Kona, Hilo, Leeward, Maui, and Honolulu, respectively. On the skills test, 82% of participants met criterion level at Hilo and 71% at Kauai, compared to only 13% at Leeward. The percentage of participants meeting criterion level on the skills test in the other workshops were 65%, 59%, 57%, and 53% at Windward, Honolulu, Kona, and Maui, respectively. The percentages of participants reaching criterion level on overall achievement of training objectives, as measured by objective tests, for the seven workshops were 72%, 71%, 58%, 52%, 50%, 44%, and 32% for Kauai, Hilo, Kona, Honolulu, Maui, Windward, and Leeward, respectively.

The results of the objective tests generally confirm the results of self-evaluation, as far as Kauai and Hilo workshops being the most effective in achieving training objectives. There also is agreement that the Kona workshop was very effective, with the percentage of participants reaching criterion level roughly 10 percentage points below that for Hilo and Kauai. Discrepancies are found between self-evaluations and objective tests for the other workshops. This may be accounted for in part by the number of non-responses. The objective tests show Leeward, Windward, Maui, and Honolulu to have been relatively less effective than Kauai, Hilo, and Kona.

Training Evaluation. Evaluation was made of the training process by participant rating of the workshop activities, reading materials, staff and resource persons, facilities, and schedule. The program contained a variety of different kinds of tasks and techniques. Table 7 shows participant ratings of the various activities on a 4-point scale, from 1 to 4.

Inspection of Table 7 shows that all but three activities were rated as contributing significantly to achievement of the training objectives. The film, study of materials, and readings, with ratings of 3.10, 3.10, and 3.08, respectively, on a scale of 1 to 4, were considered worthwhile but were of relatively less value than the other activities which had ratings ranging from 3.20 to 3.70.

Overall, participation in task groups was considered to be the most important activity. The banquet session was generally considered the next most valuable activity. Five workshops rated task groups the highest and two workshops gave the highest rating to listening at the banquet session. Ratings for task group activity and banquet session were 3.70 and 3.56, respectively, on a scale of 1.0 to 4.0. In general the participants favored group activities over individual activities, as seen by the relatively lower ratings given to reading reference materials, reviewing instructional materials, and watching the career education film. Comments by participants also revealed more enjoyment derived from participation-type activities than from the passive activities. A Leeward participant declared, "I'm glad somebody realized sitting and listening are not nearly as important as involvement!" The fact that listening at the banquet session, a passive activity, was highly rated is a tribute to the banquet speakers.

Table 7

Participant Rating* of Workshop Activities

Workshop Activities	Workshop Location							M Rating
	Windward n=45	Kauai n=43	Honolulu n=43	Hilo n=34	Kona n=57	Leeward n=15	Maui n=27	
Participating in task groups	3.38	3.65	3.37	3.88	3.73	4.00	3.92	3.70
Listening at banquet session	3.13	3.93	3.53	3.47	3.68	3.73	3.46	3.56
Informal discussions with participants	3.28	3.52	3.47	3.67	3.46	3.66	3.61	3.52
Dialogue with resource persons	3.20	3.82	3.21	3.57	3.36	3.73	3.41	3.47
Listening to career development presentations	3.20	3.39	3.19	3.61	3.42	3.46	3.44	3.38
Participating in general discussion	2.66	3.37	3.28	3.00	3.50	3.66	3.53	3.28
Viewing career education film	2.80	2.97	3.00	3.33	3.44	3.14	3.04	3.10
Reviewing career development instructional materials	2.77	3.04	2.76	3.48	3.14	3.40	3.11	3.10
Reading assigned reference materials	3.00	3.17	3.11	3.21	3.07	3.00	3.00	3.08
M Rating	3.05	3.43	3.21	3.48	3.44	3.56	3.40	3.35

* Scale = 1.0 (not worthwhile) to 4.0 (extremely worthwhile)

The reading materials, which were included for reference in conducting task group activities at the workshop and for subsequent use in the participants' school roles, might have been more effective had the workshop been longer, and allowed more time for participants to do in-depth reading. It was suggested that the reading materials be sent to participants in advance. A Kona participant wrote, "A bibliography of suggested readings would have been excellent preparation for this intensive 15-hour workshop." However, lack of sufficient funds to defray mailing costs, together with the lack of time, made this impossible. To have sent the reference materials to participants in advance, it would have been necessary to have enrollments for a workshop completely processed two weeks before the starting date. There was no workshop where this situation occurred.

Workshop personnel constituted an important factor in the training process. The extent to which instructional personnel contributed to the program objectives was determined. The instructional staff, consisting of the program director, and resource persons, consisting of the guest speaker and local panelists, were rated by participants on mastery of content and on communication skills. Results of this rating are shown on Table 8.

Inspection of Table 8 reveals significantly high rating for the program director and the guest speaker, with overall ratings of 3.76 and 3.73, respectively, on a scale of 1.0 to 4.0. There was little variation across seminars in ratings of these instructional personnel on their contribution to the program goals, with the exception of Windward and Honolulu where ratings on content and communication were 3.32 and 3.62, and 3.67 and 3.59 for program director and guest speaker, respectively. At all workshops the program director and guest speaker contributed significantly to program goals. Local panelists, rated separately from the outside resource person, were seen as an important part of the program at all workshops. The highest ratings were for the panelists at the Leeward and Maui workshops, with ratings of 3.57 and 3.49, respectively. In general, communication skills were rated slightly higher than content mastery, the single exception being the rating for program director, where content mastery was higher than communication, with ratings of 3.80 and 3.72, respectively. This difference is accounted for by the discrepant ratings given to mastery of content and communication at the Windward workshop, where the difference was .38, a significant difference. The differences at the other six workshops ranged from zero at Kauai and Leeward to .12 at Honolulu, with an average discrepancy of .04.

Table 8

Participant Rating* of Staff and Resource Personnel Competence
by Workshop Location

Workshop	Personnel					M
	Program Director	Resource Persons				
		Guest Speaker	Panelist 1	Panelist 2	Panelist 3	
Windward (n=45)						
Content Mastery	3.51	3.62	2.97	3.13	3.23	3.29
Communication Skill	3.13	3.62	3.07	3.04	3.25	3.22
M	3.32	3.62	3.02	3.09	3.24	3.26
Kauai (n=43)						
Content Mastery	3.90	3.95	3.06	3.27	0.00	3.55
Communication Skill	3.90	3.86	3.09	3.28	0.00	3.53
M	3.90	3.90	3.08	3.27	0.00	3.54
Honolulu (n=43)						
Content Mastery	3.73	3.56	3.35	3.35	3.23	3.44
Communication Skill	3.61	3.61	3.36	3.28	3.02	3.38
M	3.67	3.59	3.36	3.32	3.12	3.41
Hilo (n=34)						
Content Mastery	3.84	3.63	3.19	3.44	3.40	3.50
Communication Skill	3.91	3.64	3.27	3.58	3.42	3.56
M	3.88	3.64	3.23	3.51	3.41	3.53
Kona (n=57)						
Content Mastery	3.85	3.82	3.19	3.32	3.17	3.47
Communication Skill	3.82	3.76	3.27	3.30	3.27	3.48
M	3.84	3.79	3.23	3.31	3.25	3.48
Leeward (n=15)						
Content Mastery	3.93	3.73	3.46	3.57	3.46	3.63
Communication Skill	3.93	3.86	3.60	3.71	3.60	3.74
M	3.93	3.80	3.53	3.64	3.53	3.79
Maui (n=27)						
Content Mastery	3.84	3.76	3.58	3.36	3.47	3.60
Communication Skill	3.80	3.84	3.58	3.31	3.66	3.64
M	3.82	3.80	3.58	3.34	3.57	3.62
Total (n=286)						
Content Mastery M	3.80	3.72	3.25	3.34	3.33	3.49
Communication Skill M	3.72	3.73	3.32	3.35	3.37	3.50
Combined Competence M	3.76	3.73	3.29	3.35	3.35	3.50

*Scale = 1.0 (poor) to 4.0 (outstanding)

Three other program factors which were considered important variables in the training process were rated: program information, workshop facilities and services, and time allocation. Results of the ratings of these factors are found in Table 9.

Inspection of Table 9 reveals considerable variation among the workshops on the different items. Program information was rated relatively lower than either facilities and services or time allocation. The rating of 2.93, on a scale of 1.0 to 4.0, for adequacy of program information was above the chance mean of 2.50, but significantly less than the rating for workshop facilities (3.46) or time allocation (3.12). Inspection of the ratings for program information by workshop suggests that the overall rating of less than 3.0, on a scale of 1.0 to 4.0, was accounted for by the ratings of 2.82 and 2.62 for Windward and Honolulu respectively. A comparison of the adequacy of information across workshops shows Kauai and Kona to have the highest ratings, with 3.05 and 3.08, respectively. The relatively high ratings at Kauai and Kona might be explained by the fact that these two workshop locations were the only ones for which letters from the Career Development Continuum Project Coordinator were mailed to school personnel in the area. It is possible that the rating on the program information factor might have been higher had it been possible to have provided a more comprehensive and systematic program of information dissemination. Lack of funds to defray communication costs, and the concomitant lack of an overall plan for a single, unified operation, precluded implementation of an optimally functioning information system. Information bulletins and enrollment forms were mailed to the district offices in September. However, in many reported instances, the information failed to reach school personnel in time to enroll in the workshops. Personnel from several schools in Honolulu, Central, and Leeward districts reported, after the fact, that they had not received notification of the workshops.

Workshop facilities and services are considered important factors for delivery of in-service training. Facilities and services combine to be the single most important factor in establishing the extent to which the environment is conducive to learning. Facilities and services include items such as type and arrangement of furniture, ventilation, lighting, sound, space, food service, and audio visual equipment.

An ideal location was judged to be one where (a) food and coffee were nourishing, appetizing, plentiful, and prepared and served by professional food service staff; (b) furniture was set up in advance of the opening of the workshop according to a scientifically designed and tested plan; (c) lighting was adequate for reading and writing, with a dimming adjustment for use with audio visual aids; (d) heating and cooling could be regulated and held constant; (e) the space was neither so small as to be crowded nor so large as to dwarf the group; and (f) there was minimal distraction to interfere with the purpose and content of the workshop.

Table 9

Participant Rating* of Program Factors

Factors	Workshop Location							Factor
	Windward n=45	Kauai n=43	Honolulu n=43	Hilo n=34	Kona n=57	Leeward n=15	Maui n=27	M
Program Information								
Pre-workshop information was adequate	2.90	3.00	2.59	3.03	3.10	2.92	3.00	
Pre-workshop information accurately described program	2.73	3.09	2.65	2.94	3.05	2.92	3.00	2.93
M	2.82	3.05	2.62	2.99	3.08	2.92	3.00	
Workshop Facilities and Services								
Location (city) for workshop was satisfactory	3.24	3.48	3.46	3.52	3.50	3.66	3.50	
Coffee service was satisfactory	3.52	3.47	3.26	3.48	3.40	3.73	3.55	
Meal service was satisfactory	3.60	3.74	2.95	3.61	3.31	3.86	3.92	
Menu was satisfactory	3.72	3.71	2.96	3.55	3.22	3.66	3.95	
Meeting space allocation was satisfactory	3.30	3.72	3.20	3.64	3.52	3.80	3.77	
Tables and chairs were satisfactory	3.26	3.69	3.13	3.61	3.76	3.40	3.62	3.46
Lighting was satisfactory	2.22	3.67	3.11	3.58	3.00	3.73	3.66	
Sound system was satisfactory	3.02	3.72	3.30	3.67	3.52	3.73	3.74	
Audio visual equipment was satisfactory	3.15	3.53	3.23	3.57	3.43	3.46	3.59	
Ventilation was satisfactory	3.24	3.53	2.69	3.36	2.57	3.73	3.62	
Working space was satisfactory	3.20	3.69	3.00	3.47	3.33	3.80	3.70	
M	3.22	3.63	3.12	3.55	3.32	3.69	3.69	
Time Allocation								
Length of workshop (15 hours) was satisfactory	3.02	3.33	3.05	3.14	3.10	3.26	3.22	
Daily schedule (3:30-10:30 Friday 8:00-4:30 Saturday) was satisfactory	2.86	3.23	2.92	3.20	3.03	3.13	3.18	3.12
M	2.94	3.28	2.99	3.17	3.07	3.20	3.20	
Combined M	3.13	3.51	3.03	3.42	3.26	3.52	3.53	

*Scale = 1.0 (low) to 4.0 (high)

The facilities varied greatly among the various workshops. Overall, the mean rating of 3.46 for facilities and services indicates the physical environments which were created at the seven workshops were conducive to learning. An inspection of the ratings on facilities and services for the respective workshops, and study of ratings of the individual items within each workshop, reveals the workshop environments to fall in two groups. Three workshops were relatively lower than the other four. Rating for the facilities and services at Honolulu, Windward, and Kona were 3.12, 3.22, and 3.32, respectively, with a mean of 3.22, compared to ratings of 3.55, 3.63, 3.69, and 3.69 for Hilo, Kauai, Leeward, and Maui, respectively, with a mean of 3.64.

An analysis of the facilities and services at the individual workshops reveals that the rating of the Honolulu facilities and services, 3.12, would have been even lower had it not been for the favorable reaction to the city location, 3.46. At Windward, the 3.22 rating would have been considerably lower, except for the favorable reaction to coffee service, meal service, and menu, where ratings of 3.52, 3.60, and 3.72, respectively, served to inflate the otherwise depressed mean.

The overall high rating of 3.69 for Leeward and Maui is accounted for in both instances by the favorable reaction to food service. Individual ratings show the lighting at Windward was poor, with a rating of 2.22, and ventilation at Honolulu and Kona was unsatisfactory, with ratings of 2.69 and 2.57, respectively. Although overall ratings for the seven workshop facilities suggest the environments were adequate, the deficiencies in environmental factors, such as lighting and ventilation, might have worked against attainment of program goals. The rating of 3.63 for the Kauai facilities is reinforced by the participant comment, "Excellent physical setup for meeting." It should be noted that the rating for Leeward facilities was the result of ratings by only 15 participants, since seven enrollees did not attend the full program.

Scheduling is an important factor in delivery of in-service training. The evaluation of this factor was accomplished by participant rating of time allocation. The overall rating of 3.12 on a scale of 1.0 to 4.0 suggests the scheduling of time was satisfactory. The length of the workshop, 15 hours, generally was considered all right. Windward and Honolulu participants were relatively less satisfied, as evidenced by ratings of 3.02 and 3.05, respectively, compared to 3.10, 3.14, 3.22, 3.26, and 3.33 for Kona, Hilo, Maui, Leeward, and Kauai, respectively. The daily scheduling of time was considered satisfactory for accomplishing the workshop goals. However, scheduling at Windward, Honolulu, and Kona, with ratings 2.86, 2.92, and 3.03, respectively, was relatively less satisfactory than the scheduling at Leeward, Maui, Hilo, and Kauai, where ratings were 3.13, 3.18, 3.20, and 3.23, respectively.

Since the same time schedule was used at all workshops, this discrepancy must be explained in terms of other interacting or contributing variables. It should be noted that the program at Windward for Day 1 was not followed according to schedule. A task activity scheduled for the first session was not carried out. Comments from participants at

Honolulu and Kona suggest the rating on scheduling at these workshops may have been a reflection of the desire for more time. A Honolulu participant commented, "I enjoyed participating in this workshop, but felt we needed more time. . . ." A Kona participant observed that, "The time flew by very quickly," and another said, "We need more time." The relatively higher rating on the scheduling factor by Maui participants is reflected in the comment, "I got more than my money's worth in profitable time spent - even though it meant giving up my precious Saturday!"

The combined ratings on program information, facilities and services, and time allocation reveal the workshops to be in two groups. Windward, Honolulu, and Kona had mean ratings on these three program factors of 2.94, 2.99, and 3.07, respectively, with a mean of 3.00. This compares to mean ratings of 3.17, 3.20, 3.20, and 3.28 for Hilo, Leeward, Maui, and Kauai with a mean of 3.21, a difference of .21 between the groups. When the ratings on these three factors are combined with ratings on instructional personnel, activities, and materials, the results, as shown in Table 10, is an overall rating of the training process which indicates all workshops were above average. The process implemented at Windward and Honolulu were relatively less effective than at the other five workshops.

Table 10

Mean Rating of Training Process Factors

Training Factors	Workshop						
	Windward	Kauai	Honolulu	Hilo	Kona	Leeward	Maui
Personnel	3.26	3.54	3.41	3.53	3.48	3.79	3.62
Information	2.82	3.05	2.62	2.99	3.08	2.92	3.00
Facilities	3.22	3.63	3.12	3.55	3.32	3.69	3.69
Schedule	2.94	3.28	2.99	3.17	3.07	3.20	3.20
Materials and Activities	3.05	3.43	3.21	3.48	3.44	3.56	3.40

Scale = 1.0 (low) to 4.0 (high)

The overall ratings of the training process is supported by participants' comments which reveal considerable satisfaction with the organization and administration of the workshops. A sampling of the comments are:

"The organization was superb." (Kauai)

"Most organized workshop I've ever attended." (Kona)

"I was really impressed with the organization and efficiency exhibited by the workshop staff and the punctuality and effectiveness of the sessions. Obviously, much thought and experience went into the smooth-running, worthwhile, and rewarding sessions." (Maui)

"A well planned and thought out workshop. I would be very much interested in attending another, with or without credit!" (Hilo)

"Extremely well-organized and productive. One of the best workshops I have attended in respect to content, delivery system, and personnel participation. Professional! Those who didn't sign up really missed a good program!" (Leeward)

"This was truly one of the most outstanding workshops I have attended." (Hilo)

"I would like to see something similar presented to each faculty upon implementing the career development continuum throughout the schools." (Windward)

"Please bring back more workshops of this nature." (Kona)

"You planned and conducted a superb activity-oriented workshop! Thank you!" (Honolulu)

Perhaps most significant was the enthusiasm expressed by participants at the conclusion of the workshops--enthusiasm which is likely to enrich the Hawaii school system. One Hilo participant summed it up: "Highly stimulating. Can't wait to incorporate experiences in this class to (my) own classroom."

Results and Accomplishments Related to Objective 2: Development of Instruments for Student Growth Assessment.

A Student Growth Assessment of Career Development Inventory battery consisting of four tests, for grades 3, 6, 9, and 12, was developed. The Inventory was designed to assess student growth in career development by providing a measure of the extent to which the four goals of the Career Development Continuum, as implemented in the Career Development Continuum Curriculum Guides, are achieved. The battery does not attempt to measure attitudes toward work or vocational preferences.

After exploratory testing, preliminary versions of each of the four subtests were pilot tested with inventories administered to experimental and control groups of students in April 1975 and again in May 1975. The development of each of the inventories comprising the Student Growth Assessment Inventory is discussed for the following: Inventory Form A, Inventory Form B, Inventory Form C, and Inventory Form D.

Results of Pilot Testing

Inventory Form A was administered to 212 third grade students assigned to experimental and control groups in three schools on the island of Oahu and one school on the island of Hawaii. The tests were administered by regular classroom teachers who had received prior training. Tables 11 and 12 show the numbers of students in the pretest and posttest groups by school.

Table 11

Third Grade Students Pretested by School

School	Experimental Group	Control Group	Total
Fern	24	20	44
Konawaena	31	33	64
Kuhio	26	24	50
Maile	31	33	64
Total	102	110	212

Table 12

Third Grade Students Posttested by School

School	Experimental Group	Control Group	Total
Fern	24	16	40
Kuhio	25	22	47
Total	49	38	87

Posttests from Maile and Konawaena schools were not returned to the project office. Field supervisors reported these tests were lost in the mail.

The preliminary version of Inventory Form consisted of 120 questions divided among the four career development goal areas, with a total possible score of 110. Total possible scores for each of the subtests are as follows: Self-Realization, 25; Economic Efficiency, 25; Social Relationship, 25; Civic Responsibility, 35. Table 13 presents the pretest results, by school and by experimental and control groups of third grade students for the four subtests representing the four goal areas of career development.

Table 13

Grade 3 Pretest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Fern	14.87	17.70	3.93	3.59	.80	.80	0.29	-0.98	-0.08	-0.68
Kuhio	12.50	16.20	2.84	3.37	.55	.68	-0.48	0.31	-0.62	-0.10
Maile	17.86	14.94	3.93	4.00	.82	.97	-0.06	0.27	-1.37	-0.54
Konawaena	17.09	15.78	4.10	2.89	.73	.50	-0.07	0.24	-0.88	-1.03
All Schools	15.60	16.14	4.24	3.45	.41	.35	0.76	-0.07	-1.27	-1.22
Economic Efficiency										
Fern	18.20	16.75	3.28	3.65	.67	.81	-0.72	0.61	0.23	-0.91
Kuhio	14.61	16.37	3.06	3.06	.60	.62	0.02	1.03	-1.15	0.50
Maile	18.17	15.52	3.37	4.48	.70	1.08	-0.62	-0.26	-1.25	-0.94
Konawaena	19.09	19.15	3.23	3.44	.58	.60	-1.71	-0.37	0.58	-0.52
All Schools	17.56	17.27	3.64	3.83	.35	.39	-1.29	-0.15	-1.35	-0.94
Social Relationships										
Fern	16.12	17.40	4.27	3.33	.87	.74	-0.10	-1.05	-0.49	-0.50
Kuhio	13.42	13.37	3.78	4.49	.74	.91	-0.61	-0.08	-0.78	-0.77
Maile	17.00	16.52	3.82	3.74	.79	.90	-2.09	-1.00	1.24	-0.25
Konawaena	18.96	19.78	3.32	3.36	.59	.58	0.05	-0.75	-0.76	-0.85
All Schools	16.49	17.05	4.26	4.44	.41	.45	-1.47	-2.03	-0.31	-0.39
Civic Responsibility										
Fern	18.95	20.75	3.41	2.69	.69	.60	0.11	-0.68	-0.91	-0.53
Kuhio	16.34	19.37	4.69	3.11	.91	.63	-1.67	-0.90	0.92	-0.40
Maile	20.86	19.52	2.65	4.10	.55	.99	-1.30	-0.23	-0.58	-1.05
Konawaena	20.12	20.36	4.34	2.89	.78	.50	-1.18	-0.86	-1.29	-0.80
All Schools	19.07	20.04	4.23	3.15	.41	.32	-3.14	-1.62	1.49	-1.12
Combined Subtests										
Fern	68.16	72.60	12.70	11.50	2.59	2.57	0.24	-0.45	-0.61	-1.06
Kuhio	56.50	65.33	11.47	12.25	2.25	2.50	-0.59	0.58	-0.33	-0.50
Maile	73.91	66.52	11.18	13.50	2.33	3.27	-0.48	-0.66	-1.32	-1.06
Konawaena	75.29	75.09	13.10	10.45	2.35	1.82	-0.02	-0.94	-1.36	-0.63
All Schools	68.64	70.52	14.19	12.30	1.39	1.26	-0.35	-1.17	-1.06	-1.48

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Examination of Table 13 reveals that, overall, the control groups scored slightly higher than the experimental groups. This is accounted for by the higher mean scores of control subjects in Fern and Kuhio schools. The differences between experimental and control groups however were not significant. This was expected as the testing design called for both groups to be at equivalent career development levels prior to treatment.

Posttest results of experimental and control groups of students at Fern and Kuhio schools are presented in Table 14.

Table 14

Grade 3 Posttest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Fern	15.70	17.00	4.39	4.03	.89	1.00	-1.31	-0.94	1.26	-0.53
Kuhio	12.56	15.18	3.94	4.34	.78	.92	0.03	0.92	-1.01	-0.70
All Schools	14.10	15.94	4.42	4.26	.63	.69	-0.56	-0.53	-0.31	-1.08
Economic Efficiency										
Fern	18.08	16.06	4.89	4.02	.99	1.00	-2.83	-0.12	2.73	-0.22
Kuhio	15.12	16.90	3.23	4.17	.64	.88	0.23	-0.49	-1.05	-0.90
All Schools	16.57	16.55	4.35	4.07	.62	.66	-1.63	-0.43	1.25	-0.89
Social Relationships										
Fern	16.45	18.75	5.80	4.10	1.18	1.02	-1.28	-1.19	-0.03	0.03
Kuhio	14.28	14.59	3.48	6.29	.69	1.34	-0.06	0.28	-1.13	-1.25
All Schools	15.34	16.34	4.84	5.79	.69	0.94	-0.64	-0.85	-0.08	-1.37
Civic Responsibility										
Fern	18.33	19.12	4.41	4.25	.90	1.06	-1.30	-2.24	0.81	0.83
Kuhio	15.52	18.59	3.87	4.00	.77	.85	-0.32	-0.27	-1.20	-0.84
All Schools	16.89	18.81	4.34	4.06	.62	.65	-0.75	-1.74	-0.43	-0.18
Combined Subtests										
Fern	68.58	70.93	18.17	14.78	3.70	3.69	-1.85	-1.94	1.73	0.38
Kuhio	57.40	64.36	10.70	16.03	2.14	3.41	0.44	0.03	-0.48	-1.06
All Schools	62.87	67.13	15.72	15.66	2.24	2.54	-0.52	-1.10	1.25	-1.16

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Inspection of Table 14 reveals that control groups scored slightly higher than experimental groups on the posttest. This was also true on the pretest. On the posttest, both experimental and control groups at Fern scored slightly higher than the groups at Kuhio, and again, this was also true of pretest results.

Table 15 presents means, standard deviations, and t tests by school for third grade groups for comparisons between pre- and posttest results.

Table 15

Means, Standard Deviations, and t Tests
for Third Grade Experimental and Control Groups by School

School/Group	M		S.D.		t
	Pretest	Posttest	Pretest	Posttest	
Fern					
Experimental	69.9	72.3	12.98	14.19	.903
Control	72.1	73.1	12.04	12.30	.512
Kuhio					
Experimental	56.9	57.4	11.46	10.70	.289
Control	64.9	64.3	12.55	16.01	-.217

Inspection of Table 15 reveals there were no significant differences between pre- and posttest means. None of the t values was significant at .10, .05, or .01 level. The finding of non-significant results, no doubt, is a function of insufficient treatment time. The time interval between pre- and posttests was only one month.

Standardization

Raw scores of third grade students were converted to standardized scores and precentile rankings. For comparison purposes, both pretest and posttest scores were converted. Table 16 presents the pretest raw scores, standardized scores, and percentile rankings by subtest; Table 17 presents the same breakdowns for posttest scores.

Table 16

Third Grade Pretest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	7	30	1
	8	32	3
	9	34	5
	10	37	7
	11	39	12
	12	41	23
	13	44	31
	14	46	37
	15	49	46
	16	51	55
	17	53	66
	18	56	73
	19	58	76
	20	60	82
	21	63	87
	22	65	90
	23	68	94
	24	70	98
Economic Efficiency	9	26	1
	10	29	2
	11	32	5
	12	35	9
	13	37	13
	14	40	19
	15	43	25
	16	46	32
	17	48	41
	18	51	51
	19	54	62
	20	57	71
	21	59	81
	22	62	89
	23	65	95
	24	68	98

Subtest	Ray Score	Standardized Score	Percentile
Social Relationships	5	23	1
	6	25	1
	8	30	2
	9	32	6
	10	35	10
	11	37	13
	12	39	16
	13	42	20
	14	44	24
	15	46	31
	16	49	41
	17	51	53
	18	54	63
	19	56	72
	20	58	80
	21	61	87
	22	63	91
	23	65	94
	24	68	97
	25	70	99
Civic Responsibility	3	12	1
	10	28	2
	11	31	3
	12	33	5
	13	36	9
	14	38	13
	15	40	18
	16	43	22
	17	45	27
	18	47	37
	19	50	47
	20	52	57
	21	55	63
	22	57	69
	23	59	78
	24	62	88
	25	64	97
Combined Subtests	30	23	1
	38	28	1
	40	30	2
	44	33	3
	45	33	4
	46	34	5
	49	36	6
	50	37	7
	51	38	9
	53	39	12

Subtest	Raw Score	Standardized Score	Percentile
Combined Subtests (continued)	54	40	15
	55	40	17
	56	41	20
	57	42	23
	58	42	25
	59	43	27
	60	44	30
	61	45	35
	62	45	37
	63	46	40
	64	47	42
	65	47	43
	66	48	45
	67	49	48
	68	50	50
	69	50	51
	70	51	54
	71	52	56
	72	52	58
	73	53	59
	74	54	62
	75	54	65
	76	55	67
	78	57	70
	79	57	74
	80	58	76
	82	59	78
	83	60	81
	84	61	84
	85	62	86
	86	62	88
	87	63	91
	90	65	93
	91	66	94
	92	67	95
	93	67	97
	94	68	98
	96	69	99
	98	71	99

Examining Table 16 reveals that a combined subtests raw score of 58 falls into the 25th percentile, a raw score of 68 falls into the 50th percentile, and a raw score of 79 falls into the 74th percentile. It was necessary to score at least 96 points to fall into the 99th percentile. These were compared with posttest scores and percentile rankings which are presented in Table 17.

Table 17

Third Grade Posttest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	3	25	1
	6	32	4
	8	36	9
	9	38	13
	10	41	17
	11	43	23
	12	45	32
	13	47	41
	14	50	48
	15	52	54
	16	54	63
	17	57	73
	18	59	81
	19	61	88
	20	63	93
	21	66	95
	22	68	97
	24	73	99
Economic Efficiency	2	16	1
	10	35	4
	11	37	7
	12	39	12
	13	42	21
	14	44	28
	15	46	35
	16	49	45
	17	51	56
	18	53	64
	19	56	68
	20	58	73
	21	60	81
	22	63	89
	23	65	95
	24	67	99
Social Relationships	2	22	1
	7	33	3
	8	35	5
	9	37	9
	10	39	14
	11	41	20
	12	43	26
	13	45	31
	14	47	38
	15	49	46
	16	51	55
	17	53	61
	18	56	66
	19	58	76
	20	60	86
	21	62	91
	23	66	94
	25	70	98

Subtest	Raw Score	Standardized Score	Percentile
Civic Responsibility	6	25	1
	9	32	3
	10	34	7
	11	36	11
	12	39	15
	13	41	20
	14	43	24
	15	46	30
	16	48	37
	17	50	47
	18	53	60
	19	55	68
	20	57	74
	21	60	84
	22	62	90
	24	67	94
	25	69	98
Combined Subtests	13	18	1
	37	33	3
	42	37	5
	44	38	7
	45	39	9
	49	41	12
	50	42	16
	51	43	19
	53	44	22
	54	44	26
	55	45	29
	56	46	35
	57	46	41
	58	47	44
	59	48	47
	60	48	50
	61	49	53
	63	50	56
	64	51	58
	65	51	60
	66	52	62
	67	53	64
	69	54	66
	71	55	68
	72	56	70
	73	57	72
	75	58	74
	76	58	79
	79	60	84
	80	61	87
	81	62	89
	84	64	91
	85	64	93
	92	69	95
	94	70	97
	97	72	99

Examination of Table 17 reveals that a combined subtests raw score of 54 fell into the 26th percentile as compared to a pretest raw score of 58 falling into the 25th percentile. It was necessary to score 68 on the pretest to be in the 50th percentile, and only 60 on the posttest. A pretest raw score of 79 and a posttest raw score of 75 fell into the 74th percentile. And, a pretest raw score of 96 and a posttest raw score of 97 fell into the 99th percentile. In comparing pre- and posttest data it should be noted that pretest data consisted of responses by students in four schools and posttest data consisted of data from only two schools.

Evaluation of Inventory Form A

Inventory Form A was evaluated by teachers who completed a questionnaire to elicit their ratings of the following: readability, length, reliability, scoring, clarity of expression, and freedom from bias. Table 18 shows the mean ratings, on a scale of 1.0 to 5.0, of the evaluative criteria by participating third grade teachers.

Table 18

Third Grade Teacher Mean Ratings of Evaluative Criteria for Inventory Form A

Evaluative Criteria	Mean Rating
Freedom from bias	3.50
Directions to students	3.33
Directions for administration	3.33
Coverage of key concepts/subgoals	3.17
Scoring	3.00
Relevance to career development objectives	2.83
Reliability	2.80
Length	2.67
Readability	2.60
Clarity of expression	2.17

Note. N = 6
Rating: 1.0 = low 5.0 = high

Inspection of Table 18 suggests teachers felt there were inadequacies in the areas of relevance to career development objectives, reliability, length, readability, and clarity of expression. Comments of the teachers suggested the inventory should be shortened and the reading level should be lowered. Readability and clarity are related and together could account for realiability deficiencies. These factors were taken into consideration in modifying the inventory.

Participating third grade teachers also evaluated each item on Inventory Form A. For each item, teachers recommended that the item be (a) eliminated, (b) modified, or (c) retained in the existing form. When elimination or modification were recommended, teachers provided substitute items. The teacher evaluations are presented in Table 19.

Table 19

Third Grade Teacher Item Evaluation of Inventory Form A

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	1	3
2	0	1	3
3	0	0	4
4	0	1	3
5	0	1	3
6	0	1	3
7	0	0	4
8	0	0	4
9	1	1	2
10	2	0	2
11	1	0	3
12	1	0	3
13	1	1	2
14	1	1	2
15	1	0	3
16	0	0	4
17	0	1	3
18	0	0	4
19	0	0	4
20	0	0	4
21	0	0	4
22	0	0	4
23	0	1	3
24	0	1	3
25	0	0	4
26	0	0	4
27	0	0	4
28	0	1	3
29	0	0	4
30	0	0	4
31	0	0	4
32	0	1	3
33	0	0	4
34	0	1	3
35	0	1	3
36	0	0	4
37	1	0	3
38	0	0	4
39	0	1	3
40	0	0	4

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
41	0	0	4
42	0	0	4
43	0	1	3
44	0	0	4
45	0	0	4
46	1	0	3
47	1	0	3
48	2	0	2
49	1	0	3
50	0	0	4
51	0	1	3
52	0	0	4
53	0	0	4
54	0	0	4
55	0	1	3
56	0	0	4
57	0	0	4
58	0	0	4
59	0	0	4
60	0	1	3
61	0	1	3
62	0	0	4
63	0	0	4
64	0	0	4
65	0	0	4
66	0	0	4
67	1	0	3
68	1	0	3
69	1	1	2
70	1	1	2
71	1	0	3
72	1	0	3
73	1	0	3
74	0	1	3
75	0	1	3
76	0	1	3
77	0	1	3
78	0	2	2
79	0	1	3
80	0	0	4
81	0	0	4
82	0	0	4
83	1	1	2
84	0	0	4
85	0	0	4
86	0	0	4
87	0	1	3
88	0	0	4
89	0	2	2
90	0	0	4

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
91	0	0	4
92	0	0	4
93	0	1	3
94	0	0	4
95	0	0	4
96	0	0	4
97	1	2	1
98	0	1	3
99	0	0	4
100	0	0	4
1	1	0	3
2	1	0	3
3	1	0	3
4	1	0	3
5	1	0	3
6	1	0	3
7	0	1	3
8	0	0	4
9	0	1	3
10	0	1	3
11	0	0	4
12	0	0	4
13	0	1	3
14	0	0	4
15	0	1	3
16	0	0	4
17	0	0	4
18	0	0	4
19	0	0	4
20	0	0	4

Note. N = 4

Inspection of Table 19 reveals that teachers recommended that no items be eliminated or modified. Results of item evaluations by participating teachers indicated that all of the items were satisfactory in their present form and should be retained.

In addition to teacher evaluations of items, an item analysis was performed using results from pilot testing with 3rd graders. The results of the item analysis on Inventory Form A presented in Table 20 show the percent of correct responses for each item by subtest.

Table 20

Item Analysis of Inventory Form A by Subtest

Subtest	Item Number	Percent of Correct Responses
Self-Realization	1	73
	2	67
	3	58
	4	78
	5	82
	6	55
	7	72
	8	85
	9	63
	10	52
	11	42
	12	75
	13	43
	14	88
	15	75
	16	68
	17	62
	18	78
	19	53
	20	80
	21	60
	22	37
	23	58
	24	55
	25	72
Economic Efficiency	26	88
	27	78
	28	17
	29	63
	30	70
	31	88
	32	63
	33	78
	34	75
	35	65
	36	63
	37	80
	38	92
	39	67
	40	73
	41	83
	42	57
	43	87
	44	75
	45	60
	46	43
	47	37
	48	49
	49	47
	50	80

Subtest	Item Number	Percent of Correct Responses
Social Relationships	51	72
	52	58
	53	55
	54	48
	55	47
	56	52
	57	68
	58	72
	59	75
	60	87
	61	72
	62	82
	63	95
	64	95
	65	82
	66	53
	67	57
	68	63
	69	62
	70	52
	71	43
	72	43
	73	32
	74	88
	75	70
Civic Responsibility	76	67
	77	50
	78	68
	79	62
	80	67
	81	65
	82	54
	83	80
	84	85
	85	73
	86	88
	87	52
	88	87
	89	72
	90	82
	91	80
	92	87
	93	90
	94	93
	95	93
	96	88
	97	83
	98	80
	99	87
	100	90
	1	53
	2	65
	3	54
	4	62
	5	65
	6	58
	7	65
	8	60
	9	67
	10	68
	11	70
	12	57
	13	58
	14	62

Subtest	Item Number	Percent of Correct Responses
Civic Responsibility (continued)	15	63
	16	63
	17	50
	18	70
	19	68
	20	73

Note. Criterion level is a 75% correct response rate.

Inspection of Table 20 reveals that roughly 65% of all inventory items failed to meet the criterion level of 75%. On the Self-Realization subtest 72% of the items needed modification, as compared to 68% on the Social Relationship subtest, 67% on the Civic Responsibility subtest, and 56% on the Economic Efficiency subtest.

Reliability

Estimates of test reliability are obtained to establish the precision of a test as a measuring instrument. The reliability of any instrument refers to the extent that an individual would remain at the same relative place in a group in repeated measurements of the group. Therefore, the more reliable a test, the more consistently would an individual make the same or nearly the same score on the test, assuming no change in ability. To determine the reliability of Inventory Form A, correlation coefficients for pre- and posttest results on each of the four subtests were determined for experimental and control groups of third grade students. These data are presented in Table 21.

Table 21

Means, Standard Deviations, and Correlation Coefficients from Inventory Form A by Subtest and by Group

Subtest/Group	Mean		Standard Deviation		Correlation Coefficient
	Pre.[a]	Post.[b]	Pre.[a]	Post.[b]	
Self-Realization					
Experimental	13.93	14.28	3.54	4.22	.70
Control	16.83	16.13	3.51	4.15	.61
Economic Efficiency					
Experimental	16.46	15.93	3.69	3.85	.61
Control	16.43	16.75	3.38	3.93	.62
Social Relationship					
Experimental	14.82	15.73	4.34	4.48	.73
Control	14.86	16.48	4.69	5.81	.71
Civic Responsibility					
Experimental	17.73	17.11	4.37	4.21	.59
Control	19.70	19.08	2.96	3.77	.57
Total Test					
Experimental	62.73	64.02	13.67	14.33	.75
Control	57.83	67.91	12.69	15.09	.72

Note. [a]Pre. = Pretest
[b]Post. = Posttest

Inspection of Table 21 reveals a relatively high degree of reliability for each of the subtests based on comparisons of pre- and post-test results. The Civic Responsibility subtest was the lowest of the four with a correlation coefficient of .58, compared to a correlation coefficient of .75 for the total test.

Validity

It was deemed important to determine whether the inventory was measuring growth in those career development areas for which it was designed. The process of establishing the validity of any test is an ongoing process that requires the continuous gathering and evaluating of various types of evidence indicative of the performance of the test. Users of Inventory Form A are urged to conduct additional validation studies.

Content Validity. The high content validity of Inventory Form A arises from the fact that the items for the preliminary and modified versions of the inventory were keyed to the goals, subgoals, and objectives of the Career Development Continuum. The relationship between career development goals, subgoals, and objectives, and the 100 items which constitute Inventory Form A, after modification, is shown in Table 22.

Table 22

Relationship of Inventory Form A Items(I) to Career Development Goals(G), Subgoals(SG), and Objectives(O)

I.	G. (SR)	SG.	O.	I.	G. (EE)	SG.	O.	I.	G. (SR*)	SG.	O.	I.	G. (CR)	SG.	O.
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	2	27	2	1	1	52	3	1	-	77	4	1	-
3	1	1	3	28	2	1	2	53	3	1	-	78	4	1	-
4	1	1	4	29	2	1	2	54	3	1	-	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	1	-	31	2	2	-	56	3	2	-	81	4	2	-
7	1	1	-	32	2	2	-	57	3	2	-	82	4	2	-
8	1	1	-	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	-	84	4	3	1
10	1	3	-	35	2	3	2	60	3	3	-	85	4	3	-
11	1	3	-	36	2	3	3	61	3	3	-	86	4	3	-
12	1	3	-	37	2	3	3	62	3	3	-	87	4	3	-
13	1	4	-	38	2	4	1	63	3	4	-	88	4	4	1
14	1	4	-	39	2	4	-	64	3	4	-	89	4	4	-
15	1	4	-	40	2	4	-	65	3	4	-	90	4	4	-
16	1	4	-	41	2	4	-	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	-
18	1	5	2	43	2	5	-	68	3	5	-	93	4	5	-
19	1	5	2	44	2	5	-	69	3	5	-	94	4	5	-
20	1	5	3	45	2	5	-	70	3	5	-	95	4	5	-
21	1	6	1	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	1	47	2	6	1	72	3	6	-	97	4	6	-
23	1	6	2	48	2	6	2	73	3	6	-	98	4	6	-
24	1	6	2	49	2	6	2	74	3	6	-	99	4	6	-
25	1	3	-	50	2	3	3	75	3	3	-	100	4	1	-

Note. SR = Self-Realization SR* = Social Relationships
EE = Economic Efficiency CR = Civic Responsibility

Criterion-Related Validity. Criterion-related validity refers to establishing the relationship between scores obtained on a given test and those obtained on other specific external criterion measures generally associated with the attribute measured by the test. It was not possible to determine a criterion-related validity estimate as there were no external criteria available which could be used for comparison purposes with inventory scores.

Construct Validity. The construct validity of Inventory Form A was found by determining intercorrelations among the inventory subtests. The degree of intercorrelation between preliminary versions of the subtests was determined and is presented in Table 23.

Table 23

Intercorrelation Between Subtests of Inventory Form A

Subtest	Subtest				Total Test
	Self-Realization	Economic Efficiency	Civic Responsibility	Social Relationships	
Self-Realization	1.00				
Economic Efficiency	.75	1.00			
Civic Responsibility	.62	.65	1.00		
Social Relationships	.61	.67	.66	1.00	
Total Test	.85	.86	.80	.87	1.00

Inspection of Table 23 reveals that the intercorrelation between subtests of Inventory Form A was relatively high. This is not unexpected as the four goal areas of the Career Development Continuum are closely interrelated. Because of the overlapping among goals, it is unrealistic to expect to find pure and completely independent subtests.

Revision and Synthesis of the Final Form of Inventory Form A

Although the results from the teacher item evaluation suggested no need for modifying items on Inventory Form A, the results of the item analysis clearly indicated the need to modify or eliminate some of the items. Teacher comments indicated modifications were needed in relation to readability. The wording of items included in the modified version of the inventory was changed to clarify ambiguous items and to lower the reading level. Administration and scoring were simplified. Each item was given a one point value for a possible score of 25 on each subtest, with a total possible score of 100. Each item called for a true-false response.

The final form of Inventory Form A consists of 100 items, in four parts. Each part has 25 items, with four items for each of the six subgoals, and one item a repeated item to provide a check on reliability. The repeated items are as follows: Items 25 and 11, 50 and 36, 45 and 60, and 100 and 77.

The Administrator's Manual of Instructions - Form A was modified presenting standard procedures to follow in administering and scoring the inventory. Inventory Form A was then administered to a small group of third grade students to verify readability. Results indicated all items were appropriate for a third grade level reading ability.

A copy of the Administrator's Manual of Instructions - Form A, and a copy of Inventory Form A, with correct answers marked, appear as Appendices C and D of this report.

Inventory Form B

Results of Pilot Testing

Inventory Form B was administered to 185 sixth grade students assigned to experimental and control groups in three schools on the island of Oahu and one school on the island of Hawaii. The tests were administered by regular classroom teachers who had received prior training. Tables 24 and 25 show the numbers of students in the pretest and posttest groups by school.

Table 24

Sixth Grade Students Pretested by School

School	Experimental Group	Control Group	Total
Konawaena	25	26	51
Kuhio	24	26	50
Maile	23	19	42
Puuhale	23	19	42
Total	95	90	185

Table 25

Sixth Grade Students Posttested by School

School	Experimental Group	Control Group	Total
Kuhio	24	25	49
Puuhale	21	20	41
Total	45	45	90

Posttests from Konawaena and Maile schools were not returned to the project office. Field supervisors reported these tests were lost in the mail.

The preliminary version of Inventory Form B consisted of 174 questions divided among the four career development goal areas, with a total possible score of 110. Total possible scores for each of the subtests are as follows: Self-Realization, 24; Economic Efficiency, 40; Social Relationships, 20; and Civic Responsibility, 26. Table 26 presents the pretest results, by school and by experimental and control groups of sixth grade students for the four subtests representing the four goal areas of career development.

Table 26

Grade 6 Pretest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Konawaena	18.72	22.07	2.85	1.46	.57	.28	0.31	-1.74	-1.10	-0.57
Kuhio	20.04	20.73	3.09	3.47	.63	.68	-0.61	-0.76	-1.15	-0.32
Maile	20.73	19.31	3.00	3.00	.62	.68	-2.66	0.05	1.46	-0.97
Puuhale	18.08	17.15	3.88	4.05	.80	.93	-0.84	-0.64	-0.88	-0.71
All Schools	19.38	20.06	3.34	3.51	.34	.37	-2.17	-3.15	-0.98	0.70
Economic Efficiency										
Konawaena	26.92	28.84	4.85	4.89	.97	.96	-2.01	-2.43	0.26	1.50
Kuhio	28.08	27.11	4.48	3.93	.91	.77	-1.26	-0.25	-0.36	-0.71
Maile	28.69	30.36	3.36	4.31	.70	.98	0.70	-1.25	-0.66	0.16
Puuhale	25.30	24.47	4.27	4.12	.89	.94	-0.12	0.77	-0.57	-0.90
All Schools	27.25	27.74	4.41	4.74	.45	.50	-2.24	-1.40	-0.04	-0.87
Civic Responsibility										
Konawaena	17.16	18.65	3.37	3.33	.67	.65	-1.39	-0.26	0.30	-1.63
Kuhio	17.50	16.53	3.82	2.99	.78	.58	-0.37	-0.54	-0.38	-0.04
Maile	16.47	16.26	3.31	3.17	.69	.72	-0.53	-0.13	-0.56	-1.18
Puuhale	15.69	13.94	3.29	3.25	.68	.74	-1.64	-0.40	-0.37	-0.24
All Schools	16.72	16.54	3.47	3.54	.35	.37	-1.53	-0.43	-0.23	-0.91
Social Relationships										
Konawaena	14.80	15.07	2.30	2.22	.46	.43	-1.30	-1.03	-0.43	-0.29
Kuhio	13.13	12.43	2.66	2.79	.55	.52	-0.62	-0.26	0.91	-0.78
Maile	13.60	13.10	3.07	2.20	.64	.50	0.70	1.17	0.00	0.89
Puuhale	13.30	12.15	2.16	2.93	.45	.67	-0.73	-2.82	-0.49	2.84
All Schools	13.73	13.27	2.61	2.75	.26	.29	-0.56	-2.14	0.30	2.14
Combined Subtests										
Konawaena	76.52	84.69	10.90	9.73	2.18	1.90	-0.70	-0.16	-0.32	-1.27
Kuhio	77.16	76.73	11.55	10.12	2.35	1.98	-0.28	-0.18	-1.14	-0.85
Maile	79.60	79.15	8.89	9.46	1.85	2.17	-1.09	-0.88	0.31	-0.60
Puuhale	72.39	67.68	11.41	10.15	2.37	2.32	-1.04	0.73	-0.58	-0.53
All Schools	76.43	77.63	10.89	11.43	1.11	1.20	-1.74	-0.54	-0.56	-1.30

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Inspection of Table 26 reveals that overall, control groups scored slightly although not significantly higher than experimental groups. This was not unexpected as the training design specified that the groups be at similar career development levels prior to treatment.

Posttest results of experimental and control groups from Kuhio and Puuhale schools are presented in Table 27.

Table 27

Grade 6 Posttest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Kuhio	19.37	20.52	3.00	2.78	.61	.55	-0.22	-0.72	-1.14	-1.44
Puuhale	19.04	19.10	3.76	2.73	.82	.61	-1.23	-1.79	-0.69	0.80
Both Schools	19.22	19.88	3.34	2.82	.49	.42	-1.36	-1.50	-0.92	-0.19
Economic Efficiency										
Kuhio	27.66	25.00	5.56	5.11	1.13	1.02	-1.64	0.07	-0.33	-1.12
Puuhale	25.95	24.65	5.58	5.14	1.21	1.15	-1.52	-0.31	-0.33	-0.79
Both Schools	26.86	24.84	5.57	5.07	.83	.75	-2.16	-0.15	-0.45	-1.34
Civic Responsibility										
Kuhio	17.41	16.64	4.23	4.08	.86	.81	-1.26	-0.27	-1.04	-1.18
Puuhale	15.09	15.65	4.38	3.81	.95	.85	-2.31	-0.96	1.64	0.27
Both Schools	16.33	16.20	4.41	3.95	.65	.58	-2.35	-0.70	0.85	-0.69
Social Relationships										
Kuhio	13.33	12.48	2.95	2.45	.60	.49	-1.03	0.24	1.11	-0.36
Puuhale	12.71	12.35	2.02	2.49	.44	.55	-1.11	-1.08	1.55	0.81
Both Schools	13.04	12.42	2.55	2.44	.38	.36	-1.15	-0.56	2.13	0.34
Combined Subtests										
Kuhio	77.16	75.04	13.33	11.62	2.72	2.32	-1.51	-0.29	-0.61	-1.16
Puuhale	72.09	71.40	13.05	11.22	2.84	2.51	-1.86	-0.61	0.32	-0.32
Both Schools	74.80	73.42	13.30	11.46	1.98	1.70	-2.20	-0.54	-0.14	-0.97

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Inspection of Table 27 reveals minimal differences between experimental and control group posttest scores. Both experimental and control groups at Kuhio scored slightly higher than the groups at Puuhale on the posttest.

Table 28 presents means, standard deviations and t tests by school for sixth grade groups for comparisons between pre- and posttest results.

Table 28

Means, Standard Deviations, and t Tests
for Sixth Grade Experimental and Control Groups by School

School/Group	M		S.D.		t
	Pretest	Posttest	Pretest	Posttest	
Kuhio					
Experimental	77.6	77.9	11.51	13.10	.141
Control	76.2	75.0	10.06	11.62	.768
Puuhale					
Experimental	73.3	73.6	11.50	13.10	.207
Control	67.7	71.9	10.44	11.52	2.670*

* $< .05$

Examination of Table 28 reveals there were no significant differences between pre- and posttest means for Kuhio groups of students or for the experimental group at Puuhale. None of the t values for these groups was significant at .10, .05, or .01 levels; however the t values for the control group at Puuhale was significant at .10, .05, and .01 levels. The non-significant results at Kuhio and also for the experimental group at Puuhale probably were a function of insufficient treatment time as there was only a one-month interval between test administrations. The significant difference between pre- and posttest means of the control group at Puuhale is difficult to explain. It may be that students in these classes were experiencing career development activities through other means which were powerful enough to produce differences even in the short time span.

Standardization

Both pretest and posttest raw scores of sixth grade experimental and control groups were converted to standardized scores and percentile rankings. Table 29 shows pretest conversions and Table 30 presents posttest raw scores, standardized scores and percentiles by subtest.

Table 29

Sixth Grade Pretest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	11	25	1
	12	28	3
	13	31	5
	14	34	7
	15	37	11
	16	40	17
	17	43	26
	18	46	33
	19	49	41
	20	52	51
	21	55	63
	22	58	73
	23	61	85
	24	64	96
Economic Efficiency	14	20	1
	17	27	2
	18	29	3
	19	31	5
	20	33	8
	21	36	12
	22	38	15
	23	40	17
	24	43	20
	25	45	26
	26	47	35
	27	49	44
	28	52	52
	29	54	63
	30	56	72
	31	59	78
	32	61	86
	33	63	93
	34	65	96
	35	68	98
Civic Responsibility	8	25	1
	9	28	2
	10	31	6
	11	33	9
	13	39	14
	14	42	20
	15	45	27
	16	48	39
	17	51	50
	18	54	62
	19	57	73
	20	59	82
	21	62	90
	22	65	96
	23	68	98
	25	74	99

Subtest	Raw Score	Standardized Score	Percentile
Social Relationships	6	20	1
	8	28	2
	9	32	4
	10	36	9
	11	39	15
	12	43	24
	13	47	36
	14	51	54
	15	55	70
	16	59	81
	17	63	89
	18	66	95
	20	74	99
Combined Subtests	49	25	1
	50	26	2
	52	27	3
	56	31	4
	57	32	6
	59	34	7
	61	36	9
	62	37	11
	63	38	13
	64	39	15
	65	39	17
	66	40	19
	67	41	22
	68	42	25
	70	44	27
	71	45	29
	72	46	31
	73	47	33
	74	48	35
	75	49	38
	76	50	43
	77	51	45
	78	51	50
	79	52	55
	80	53	58
	81	54	62
	82	55	67
	83	56	73
	84	57	76
	85	58	78
	86	59	81
	87	60	83
	88	61	85
	89	62	87
	90	63	90
	91	63	92
	92	64	93
	93	65	95
	94	66	97
	95	67	98
	97	69	99

Examining Table 29 reveals that a combined subtests raw score of 68 falls into the 25th percentile; a raw score of 78 falls into the 50th percentile; a raw score of 84 falls into the 76th percentile; and a raw score of 97 falls into the 99th percentile. These were compared with posttest scores and percentile rankings which are presented in Table 30.

Table 30

Sixth Grade Posttest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	12	28	2
	13	31	6
	14	34	9
	15	37	13
	16	40	19
	17	43	26
	18	46	33
	19	49	44
	20	52	53
	21	55	62
	22	58	76
	23	61	88
	24	64	97
Economic Efficiency	13	25	1
	15	28	3
	17	32	7
	18	34	10
	19	36	13
	20	38	18
	22	41	21
	24	45	23
	25	47	27
	26	48	36
	27	50	46
	28	52	50
	29	54	53
	30	56	63
	31	57	74
	32	59	82
	33	61	90
	34	63	97
Civic Responsibility	2	17	1
	10	35	6
	11	38	16
	14	45	27
	15	47	37
	16	49	43
	17	52	48
	18	54	56
	19	56	64
	20	58	77
	21	61	88
	22	63	96
Social Relationships	5	18	1
	7	26	3
	10	38	7
	11	42	16
	12	46	31
	13	50	50
	14	54	68
	15	58	81

Subtest	Raw Score	Standardized Score	Percentile
Social Relationships (continued)	16	62	89
	17	66	93
	18	70	97
	19	74	99
Combined Subtests	38	22	1
	47	29	3
	52	33	6
	55	35	9
	56	36	13
	60	39	17
	61	40	19
	65	43	21
	66	43	23
	69	46	26
	70	46	32
	71	47	39
	74	49	41
	75	50	43
	76	51	46
	77	52	48
	80	54	51
	81	55	57
	82	55	62
	83	56	68
	84	57	72
	85	58	74
	86	59	78
	87	59	82
	89	61	86
	90	62	90
	91	62	97

Inspection of Table 30 reveals that, for the combined subtests, a posttest raw score of 69 fell into the 26th percentile as compared to a pretest raw score 68 falling into the 25th percentile. A posttest raw score of 80 was in the 51st percentile, whereas a pretest raw score of 78 was in the 50th percentile. Scores of 85 and 86 on the pre- and posttests, respectively, fell into the 78th percentile. The greatest difference was at the higher raw score levels; whereas a pretest score of 91 fell into the 92nd percentile, the same posttest raw score was in the 97th percentile. In comparing pre- and posttest data it should be noted that pretest data consisted of responses by students in four schools and posttest data consisted of data from only two schools.

Evaluation of Inventory Form B

Inventory Form B was evaluated by teachers who completed a questionnaire to elicit their ratings of the following: length, scoring, clarity, reliability, and readability. Table 31 shows the mean ratings, on a scale of 1.0 to 5.0, of the evaluative criteria by participating sixth grade teachers.

Table 31

Sixth Grade Teacher Mean Ratings
of Evaluative Criteria for Inventory Form B

Evaluative Criteria	Mean Rating
Feedom from bias	3.20
Coverage of key concepts/subgoals	3.00
Relevance to career development objectives	2.75
Directions for administration	2.60
Directions to students	2.40
Clarity of expression	2.20
Scoring	2.20
Length	2.00
Readability	2.00
Reliability	1.25

Note. N = 5
Rating: 1.0 = low 5.0 = high

Inspection of Table 31 reveals that all evaluative criteria, with the exception of freedom from bias and coverage of key concepts/subgoals, were rated relatively low. Teacher comments indicated that of all areas, readability, length, and scoring most needed modifying. The low reliability rating may be accounted for by the low readability and clarity of expression ratings which are related. All of these ratings were noted by project staff for subsequent inventory modifications.

Participating sixth grade teachers were also asked to rate each inventory item as to whether it should be (a) eliminated, (b) modified, or (c) retained in the existing form. When recommending elimination or modification, teachers provided substitute items. The teacher item evaluations are presented in Table 32.

Table 32

Sixth Grade Teacher Item Evaluation
of Inventory Form B

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	0	3
2	0	0	3
3	0	0	3
4	0	2	1
5	0	1	2
6	0	2	1
7	0	0	3
8	0	1	2
9	0	0	3
10	0	2	1
11	0	0	3
12	0	0	3
13	0	2	1
14	0	1	2
15	0	0	3
16	0	2	1
17	0	0	3
18	0	0	3
19	0	2	1
20	0	1	2
21	0	0	3
22	0	1	2
23	0	0	3
24	0	0	3
25	0	2	1
26	0	0	3
27	0	0	3
28	0	0	3
29	0	0	3
30	0	0	3
31	0	0	3
32	0	0	3
33	0	1	2
34	0	0	3
35	0	0	3
36	0	0	3
37	0	0	3
38	0	0	3
39	0	0	3
40	0	0	3
41	0	0	3
42	0	0	3
43	0	1	2
44	0	0	3
45	0	0	3
46	0	0	3
47	0	0	3
48	0	0	3

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	0	3
2	0	2	1
3	0	1	2
4	0	2	1
5	0	1	2
6	0	2	1
7	0	0	3
8	0	0	3
9	0	2	1
10	0	2	1
11	0	2	1
12	0	2	1
13	0	2	1
14	0	2	1
15	0	2	1
16	0	2	1
17	0	2	1
18	1	1	1
19	0	1	2
20	0	2	1
21	0	1	2
22	0	2	1
23	0	2	1
24	0	1	2
25	0	0	3
26	0	2	1
27	0	1	2
28	0	2	1
29	0	1	2
30	0	1	2
31	0	2	1
32	0	2	1
33	0	2	1
34	0	0	3
35	0	2	1
36	0	2	1
37	0	0	3
38	0	2	1
39	0	1	2
40	0	1	2
41	0	0	3
42	0	2	1
43	0	2	1
44	1	0	2
45	1	0	2
46	0	2	1
47	0	0	3
48	0	2	1
49	0	2	1
50	0	2	1

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
51	0	0	3
52	1	1	1
53	0	2	1
54	0	1	2
55	0	2	1
56	0	1	2
57	0	2	1
58	1	0	2
59	0	2	1
60	0	1	2
61	0	0	3
62	0	1	2
63	0	1	2
64	0	1	2
65	0	1	2
66	0	1	2
67	0	2	1
68	0	1	2
69	0	1	2
70	0	0	3
71	0	1	2
72	0	2	1
73	0	1	2
74	0	0	3
75	1	1	1
76	0	0	3
77	0	0	3
78	0	0	3
79	0	1	2
80	0	1	2
1	0	0	3
2	0	0	3
3	0	2	1
4	0	2	1
5	0	0	3
6	0	2	1
7	0	2	1
8	0	2	1
9	0	1	2
10	0	2	1
11	0	1	2
12	0	1	2
13	0	2	1
14	0	1	2
15	0	1	2
16	0	1	2

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	0	3
2	0	0	3
3	0	0	3
4	0	0	3
5	0	0	3
6	0	0	3
7	0	0	3
8	0	0	3
9	0	0	3
10	0	0	3
1	0	0	3
2	0	0	3
3	0	0	3
4	0	0	3
5	0	0	3
6	0	0	3
7	0	0	3
8	0	0	3
9	0	0	3
10	0	0	3
11	0	0	3
12	0	0	3
13	0	0	3
14	0	0	3
15	0	0	3
16	0	0	3
17	0	0	3
18	0	0	3
19	0	0	3
20	0	0	3

Note. N = 3

Examination of Table 32 reveals that teachers recommended that roughly 21% of the items needed modification. No items were recommended to be eliminated. As with the teacher survey results, these evaluations were noted for use by project staff in making inventory modifications.

In addition to teacher evaluations of items, an item analysis was performed using results from pilot testing. The results of the item analysis on Inventory Form B presented in Table 33 show the percent of correct responses for each item by subtest.

Table 33

Item Analysis of Inventory Form B by Subtest

Subtest	Item Number	Percent of Correct Responses
Self-Realization	1	87
	2	68
	3	83
	4	50
	5	75
	6	67
	7	60
	8	72
	9	78
	10	73
	11	38
	12	77
	13	73
	14	85
	15	75
	16	68
	17	75
	18	65
	19	63
	20	75
	21	78
	22	77
	23	85
	24	85
	25	73
	26	45
	27	80
	28	58
	29	78
	30	78
	31	97
	32	83
	33	83
	34	92
	35	88
	36	92
	37	98
	38	97
	39	98
	40	85
	41	83
	42	83
	43	74
	44	74
	45	86
	46	86
	47	91
	48	91

Subtest	Item Number	Percent of Correct Responses
Economic Efficiency	1	98
	2	52
	3	70
	4	72
	5	37
	6	92
	7	73
	8	88
	9	82
	10	83
	11	65
	12	2
	13	50
	14	82
	15	90
	16	67
	17	78
	18	73
	19	52
	20	82
	21	87
	22	90
	23	55
	24	92
	25	23
	26	85
	27	74
	28	68
	29	82
	30	87
	31	78
	32	67
	33	65
	34	77
	35	80
	36	77
	37	47
	38	82
	39	78
	40	30
	41	97
	42	87
	43	62
	44	68
	45	58
	46	68
	47	92
	48	72
	49	87
	50	60

Subtest	Item Number	Percent of Correct Responses
Economic Efficiency (continued)	51	67
	52	57
	53	65
	54	87
	55	63
	56	65
	57	68
	58	95
	59	33
	60	40
	61	18
	62	73
	63	73
	64	70
	65	58
	66	77
	67	42
	68	40
	69	80
	70	77
	71	65
	72	52
	73	85
	74	75
	75	70
	76	85
	77	63
	78	75
	79	68
	80	62
Social Relationships	1	77
	2	87
	3	85
	4	88
	5	53
	6	43
	7	30
	8	43
	9	64
	10	45
	11	62
	12	68
	13	55
	14	48
	15	57
	16	60

Subtest	Item Number	Percent of Correct Responses
Social Relationships (continued)	1	75
	2	70
	3	37
	4	88
	5	23
	6	55
	7	48
	8	55
	9	47
	10	33
Civic Responsibility	1	68
	2	40
	3	35
	4	53
	5	53
	6	38
	7	62
	8	50
	9	55
	10	30
	11	37
	12	40
	13	32
	14	23
	15	37
	16	37
	17	37
	18	55
	19	57
	20	33

Note. Criterion level is a 75% correct response rate.

Examination of Table 33 reveals that roughly 58% of all items on Inventory Form B failed to meet the criterion level of 75%. On the Civic Responsibility subtest 100% of the items needed modification, as compared to 78% on the Social Relationship subtest, 57% on the Economic Efficiency subtest, and 31% on the Self-Realization subtest.

Reliability

In order to establish the precision of a test as a measuring instrument, estimates of test reliability are obtained. The reliability of any instrument refers to the extent that an individual would remain at the same relative place in a group in repeated measurements of the group. The more reliable a test, the more consistently would an individual make the same or nearly the same score on the test, assuming no change in ability. To determine the reliability of Inventory Form B, correlation coefficients for pre- and posttest results on each of the four subtests were determined for experimental and control groups of sixth grade students. These data are presented in Table 34.

Table 34

Means, Standard Deviations, and Correlation Coefficients from Inventory Form B by Subtest and by Group

Subtest/Group	Mean		Standard Deviation		Correlation Coefficient
	Pre.[a]	Post.[b]	Pre.[a]	Post.[b]	
Self-Realization					
Experimental	19.41	19.58	3.38	3.20	.73
Control	19.18	19.88	4.16	2.88	.63
Economic Efficiency					
Experimental	27.14	27.48	4.50	5.35	.77
Control	26.02	25.09	4.16	4.99	.59
Civic Responsibility					
Experimental	15.78	16.53	3.75	4.52	.77
Control	15.39	16.30	3.36	4.00	.50
Social Relationships					
Experimental	13.37	13.12	2.40	2.64	.31
Control	12.16	12.37	2.72	2.46	.45
Total Test					
Experimental	75.80	76.04	11.56	13.11	.78
Control	72.69	73.74	10.96	11.54	.77

Note. [a]Pre. = Pretest
[b]Post. = Posttest

Examination of Table 34 reveals a relatively high degree of reliability for each of the subtests based on comparisons of pre- and posttest results. The Social Relationships subtest was the lowest of the four with correlation coefficients of .31 and .45 for experimental and control groups respectively.

Validity

It was deemed important to determine whether Inventory Form B was measuring growth in those career development areas for which it was designed. The process of establishing the validity of any test is an ongoing process that requires the continuous gathering and evaluating of various types of evidence indicative of the performance of the test. Users of Career Development Inventory Form B are urged to conduct additional validation studies.

Content Validity. The high content validity of Inventory Form B arises from the fact that the items for the preliminary and modified versions of the inventory were keyed to the goals, subgoals, and objectives of the Career Development Continuum. The relationship between career development goals, subgoals, and objectives, and the 100 items which constitute Inventory Form B, after modification, is shown in Table 35.

Table 35

Relationship of Inventory Form B Items(I) to Career Development Goals(G), Subgoals(SG), and Objectives(O)

I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.
	(SR)				(EE)				(SR*)				(CR)		
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	2	27	2	1	1	52	3	1	-	77	4	1	-
3	1	1	2	28	2	1	2	53	3	1	-	78	4	1	-
4	1	1	2	29	2	1	2	54	3	1	-	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	2	2	31	2	2	-	56	3	2	-	81	4	2	-
7	1	2	3	32	2	1	-	57	3	2	-	82	4	2	-
8	1	2	3	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	1	84	4	3	1
10	1	3	-	35	2	3	2	60	3	3	-	85	4	3	-
11	1	3	-	36	2	3	3	61	3	3	-	86	4	3	-
12	1	3	-	37	2	3	3	62	3	3	-	87	4	3	-
13	1	4	1	38	2	4	1	63	3	4	1	88	4	4	1
14	1	4	2	39	2	4	1	64	3	4	-	89	4	4	-
15	1	4	2	40	2	4	2	65	3	4	-	90	4	4	-
16	1	4	3	41	2	4	2	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	1
18	1	5	1	43	2	5	-	68	3	5	-	93	4	5	-
19	1	5	2	44	2	5	-	69	3	5	-	94	4	5	-
20	1	5	3	45	2	5	-	70	3	5	-	95	4	5	-
21	1	6	-	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	-	47	2	6	1	72	3	6	-	97	4	6	-
23	1	6	-	48	2	6	2	73	3	6	-	98	4	6	-
24	1	6	-	49	2	6	2	74	3	6	-	99	4	6	-
25	1	1	2	50	2	1	2	75	3	1	1	100	4	1	-

Note. SR = Self-Realization
EE = Economic Efficiency
SR* = Social Relationships
CR = Civic Responsibility

Criterion-Related Validity. Criterion-related validity refers to establishing the relationship between scores obtained on a given test and those obtained on other specific external criterion measures generally associated with the attribute measured by the test. It was not possible to determine a criterion-related validity estimate as there were no external criteria available which could be used for comparison purposes with Inventory Form B scores.

Construct Validity. The construct validity of Inventory Form B was determined by obtaining intercorrelations among the inventory subtests. The degree of intercorrelation between preliminary versions of the subtests was determined and is presented in Table 36.

Table 36

Intercorrelation Between Subtests of Inventory Form B

Subtest	Subtest				Total Test
	Self-Realization	Economic Efficiency	Civic Responsibility	Social Relationships	
Self-Realization	1.00				
Economic Efficiency	.53	1.00			
Civic Responsibility	.70	.77	1.00		
Social Relationships	-.01	.13	.34	1.00	
Total Test	.74	.82	.95	.41	1.00

Inspection of Table 36 reveals that the intercorrelations between subtests of Inventory Form B are relatively high in most instances. This is not unexpected as the four goal areas of the Career Development Continuum are closely interrelated. Because of the overlapping among goals, it is unrealistic to expect to find pure and completely independent subtests.

Revision and Synthesis of Final Form of Inventory Form B

Modifications were made on Inventory Form B based on teacher evaluations and comments, and the item analysis. The wording of items was changed to clarify ambiguities and to lower the reading level. All items included were four-choice multiple choice items, each having only one correct response. The inventory was shortened to 100 items, 25 items for each of four subtests. There are four items for each of the six subgoals, and one item a repeated item to provide a check on reliability. The repeated items are as follows: Items 4 and 25, 29 and 50, 51 and 75, and 79 and 100. Scoring was also simplified as each item on the modified version is worth one point, making a total possible score of 100.

The Administrator's Manual of Instructions - Form B was also modified and presents standard procedures to follow in administering and scoring the inventory. Inventory Form B was then administered to a group of sixth grade students. Results indicated that the modifications made, particularly the lower reading level, were satisfactory.

A copy of the Administrator's Manual of Instructions - Form B and a copy of Inventory Form B, with correct answers marked, appear as Appendices E and F of this report.

Results of Pilot Testing

Inventory Form C was administered to 255 ninth grade students assigned to experimental and control groups in four schools on the island of Oahu and one school on the island of Hawaii. The tests were administered by regular classroom teachers who had received prior training. Tables 37 and 38 show the number of students in pretest and posttest groups by school.

Table 37

Ninth Grade Students Pretested by School

School	Experimental Group	Control Group	Total
Central	19	22	441
Jarrett	31	25	56
Konawaena	27	24	51
Nanakuli	30	25	55
Waipahu	24	28	52
Total	131	124	255

Table 38

Ninth Grade Students Posttested by School

School	Experimental Group	Control Group	Total
Central	14	20	34
Jarrett	30	24	54
Waipahu	23	27	50
Total	67	71	138

Posttests from Konawaena and Nanakuli were not returned to the project office. Field supervisors reported these tests were lost in the mail.

The preliminary version of Inventory Form C had a total possible score of 110 points. The Self-Realization subtest had 24 possible points, the Economic Efficiency subtest 40 possible points, the Civic Responsibility subtest 26 possible points, and the Social Relationships subtest 20 possible points. Table 39 presents the pretest results, by school and by experimental and control groups of ninth grade students for the four subtests representing the four goal areas of career development.

Table 39

Grade 9 Iretest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Konawaena	16.11	15.91	3.14	3.13	.60	.63	-0.12	-2.05	-0.49	0.34
Central	16.57	15.63	2.11	2.40	.48	.51	-1.74	-0.49	0.46	-0.89
Jarrett	15.58	16.00	2.34	2.76	.42	.55	-0.92	0.17	0.79	0.25
Nanakuli	16.73	15.84	3.24	1.51	.59	.30	0.45	-0.77	-0.89	-0.91
Waipahu	16.04	15.10	2.25	2.98	.46	.56	0.35	-1.36	-0.23	2.01
All Schools	16.18	15.68	2.70	2.61	.23	.23	0.13	-2.71	-0.26	2.86
Economic Efficiency	23.00									
Konawaena	23.00	23.20	5.50	5.03	1.05	1.02	-0.08	-0.64	-0.71	-0.46
Central	22.94	20.18	4.32	3.62	.99	.77	-0.49	-0.67	-1.16	-0.55
Jarrett	27.19	22.32	2.90	3.40	.52	.68	-0.08	-1.54	-0.86	-0.03
Nanakuli	20.96	21.16	5.18	3.27	.94	.65	1.17	-0.35	-0.65	-0.78
Waipahu	23.04	22.96	3.19	5.23	.65	.98	-0.14	-0.52	0.36	-1.18
All Schools	23.52	22.02	4.82	4.31	.42	.38	-0.93	-0.42	-1.49	-1.07
Civic Responsibility										
Konawaena	18.14	18.50	3.48	2.87	.67	.58	0.34	0.44	0.05	-0.34
Central	17.31	17.18	2.35	2.53	.54	.54	-0.60	-0.19	-0.72	-0.83
Jarrett	20.74	17.20	1.61	3.57	.28	.74	0.85	-1.24	-0.90	-0.31
Nanakuli	17.40	17.80	2.56	2.19	.46	.43	1.09	-0.84	-0.37	0.24
Waipahu	18.16	16.71	2.56	3.56	.52	.67	0.37	-0.50	-0.19	-0.24
All Schools	18.47	17.45	2.85	3.04	.24	.27	-0.20	-1.77	-0.48	0.55
Social Relationships										
Konawaena	14.03	12.75	2.08	2.89	.40	.59	-0.16	-1.93	0.33	0.69
Central	13.78	14.27	2.22	1.95	.51	.41	0.26	1.11	-1.04	-0.02
Jarrett	16.19	14.68	5.47	2.57	.98	.51	0.11	-0.53	0.26	-0.98
Nanakuli	14.36	14.24	2.70	1.83	.49	.36	-1.61	-0.90	0.52	-0.24
Waipahu	15.75	14.07	1.79	3.66	.36	.69	-0.05	1.15	-0.79	1.59
All Schools	14.90	14.00	3.41	2.74	.29	.24	0.23	-0.29	1.04	4.74
Combined Subtests										
Konawaena	71.22	70.08	10.41	9.74	2.00	1.99	0.58	-0.36	-0.00	-0.81
Central	70.15	66.81	7.12	7.98	1.63	1.70	0.27	0.22	-1.08	-0.92
Jarrett	78.80	70.60	4.68	7.78	.84	1.55	0.21	-0.73	-0.30	-0.74
Nanakuli	69.33	68.64	8.87	5.88	1.61	1.17	0.41	-0.00	-0.69	-0.76
Waipahu	73.04	68.92	5.85	10.90	1.19	2.06	0.63	-0.03	-0.94	-0.01
All Schools	72.63	69.05	8.38	8.65	.73	0.77	-0.73	-0.31	0.07	0.16

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Inspection of Table 39 reveals that, overall, experimental groups scored slightly higher than control groups within the same school, as well as across schools. However, the difference was not significant. The testing design required that both groups be at equivalent career development levels at the time of the pretest. Posttest results are given in Table 40.

Table 40

Grade 9 Posttest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Central	18.35	16.13	2.61	3.84	.70	.81	0.23	-1.00	-0.62	-0.01
Jarrett	16.46	15.79	2.78	2.48	.50	.50	-1.77	0.90	1.73	1.22
Waipahu	16.82	15.18	2.57	3.53	.53	.67	-1.06	-0.94	0.48	-0.38
All Schools	16.98	15.67	2.73	3.30	.33	.38	-1.69	-1.26	1.81	0.43
Economic Efficiency										
Central	24.42	23.50	5.37	4.87	1.43	1.03	-0.71	-0.17	-0.75	-0.90
Jarrett	26.13	21.50	4.34	3.62	.79	.73	-2.19	0.57	0.61	-0.67
Waipahu	23.82	23.03	4.19	6.45	.87	1.24	-1.44	-0.52	-0.22	-0.19
All Schools	24.98	22.67	4.58	5.18	.55	.60	-2.36	-0.09	-0.41	0.05
Civic Responsibility										
Central	18.92	17.77	3.58	2.30	.95	.49	-0.29	-1.00	-0.78	-0.38
Jarrett	20.70	17.12	2.47	3.20	.45	.65	-2.79	-1.07	1.69	-0.49
Waipahu	20.39	16.37	2.53	3.28	.52	.68	-0.68	1.06	-0.95	-0.27
All Schools	20.22	17.04	2.80	3.01	.34	.35	-2.61	-0.60	-0.03	-0.84
Social Relationships										
Central	14.28	15.00	2.43	2.70	.64	.57	0.28	0.02	-0.94	-1.33
Jarrett	15.96	15.16	2.09	2.89	.38	.59	-1.28	-1.36	0.39	0.81
Waipahu	15.69	14.30	2.18	3.06	.45	.60	-1.52	-2.29	-0.03	1.17
All Schools	15.52	14.80	2.25	2.89	.27	.34	-1.66	-2.44	-0.74	1.19
Combined Subtests										
Central	75.85	72.40	10.64	10.19	2.84	2.17	0.11	-0.21	-1.05	-0.72
Jarrett	79.26	69.58	6.93	8.13	1.26	1.66	-2.18	-0.41	1.14	0.35
Waipahu	76.73	68.11	8.03	10.63	1.67	2.04	-1.03	0.26	-0.13	-0.05
All Schools	77.68	69.89	8.19	9.76	1.00	1.14	-1.83	-0.09	-0.22	-0.12

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Examination of Table 40 reveals that experimental groups at each school scored somewhat higher than control groups on all parts of the posttest. Similarly, on total test mean scores, both experimental and control groups scored higher than on the pretest. A t test was conducted to determine if the mean differences between pre- and posttests were significant, the results of which are presented in Table 41.

Table 41

Means, Standard Deviations, and t Tests
for Ninth Grade Experimental and Control Groups by School

School/Group	M		S.D.		t
	Pretest	Posttest	Pretest	Posttest	
Central					
Experimental	74.4	79.2	6.56	10.62	1.983**
Control	67.3	72.6	8.47	10.30	3.722*
Jarrett					
Experimental	78.8	79.2	4.72	7.04	.283
Control	70.7	69.5	7.45	8.31	-.749
Waipahu					
Experimental	73.3	77.3	6.06	7.90	2.94 *
Control	69.1	67.8	11.10	10.75	-.858

* <.10 ** <.05

Examination of Table 41 reveals that there were no significant differences between pre- and posttest results of experimental and control groups at Jarrett or for the control group at Waipahu. None of the t values was significant at the .01, .05, or .10 levels. These non-significant differences probably are a function of insufficient treatment time which was only a one month period. The mean difference was significant for the control group at Central and the experimental group at Waipahu at all three levels. For the experimental group at Central, the mean difference was significant at the .05 level. These significant differences between pre- and posttest mean scores are possibly due to students experiencing career development experiences, other than those from the Career Development Curriculum Guides, which could be powerful enough to affect posttest results even in the short time span between tests.

Standardization

Raw scores of ninth grade students were converted to standardized scores and percentile rankings. For comparison purposes, both pretest and posttest scores were converted. Table 42 presents the pretest raw scores, standardized scores, and percentile rankings by subtest; Table 43 presents the same breakdowns for posttest scores.

Table 42

Ninth Grade Pretest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	9	23	1
	10	27	1
	11	31	4
	12	34	7
	13	38	10
	14	42	20
	15	46	35
	16	49	47
	17	53	61
	18	57	77
	19	60	86
	20	64	91
	21	68	95
	22	72	98
	23	75	99
Economic Efficiency	11	24	1
	12	26	1
	13	28	2
	16	34	5
	17	36	11
	18	39	16
	19	41	20
	20	43	25
	21	45	31
	22	47	37
	23	49	43
	24	51	52
	25	53	60
	26	55	68
	27	57	74
	28	59	79
	29	61	85
	30	63	90
	31	66	94
	32	68	98
Civic Responsibility	11	24	1
	13	31	3
	14	34	7
	15	38	13
	16	41	19
	17	45	29
	18	48	43
	19	52	56
	20	55	69
	21	59	81
	22	62	90
	23	66	94
	24	69	97
	25	73	99
	26	76	99

Subtest	Raw Score	Standardized Score	Percentile
Social Relationships	7	27	1
	9	33	2
	10	36	3
	11	39	5
	12	41	11
	13	44	21
	14	47	34
	15	50	52
	16	53	72
	17	56	87
	18	59	94
	19	62	98
Combined Subtests	53	26	1
	54	28	1
	55	29	2
	56	30	3
	58	32	5
	59	34	7
	60	35	9
	61	36	10
	62	37	11
	63	38	14
	64	40	17
	65	41	20
	66	42	22
	67	43	24
	68	44	28
	69	45	32
	70	47	36
	71	48	40
	72	49	44
	73	50	48
	74	51	51
	75	53	55
	76	54	61
	77	55	68
	78	56	72
	79	57	76
	80	59	81
	81	60	85
	82	61	89
	83	62	90
	84	63	93
	86	66	95
	87	67	97
	88	68	98
	98	80	99

Inspection of Table 42 reveals that a combined subtests, or total test, raw score of 67 falls into the 24th percentile; a raw score of 75 falls into the 55th percentile; a raw score of 79 falls into the 76th percentile; and a raw score of 98 falls into the 99th percentile. These were compared with posttest scores and percentile rankings which are presented in Table 43.

Table 43

Ninth Grade Posttest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	8	17	1
	10	24	2
	11	28	4
	13	35	5
	14	39	10
	15	43	19
	16	46	33
	17	50	51
	18	54	67
	19	57	76
	20	61	86
	21	65	94
	22	68	97
	23	72	99
Economic Efficiency	15	28	3
	16	30	7
	18	35	10
	19	37	13
	20	39	18
	21	41	22
	22	43	25
	23	46	28
	24	48	30
	25	50	37
	26	52	49
	27	54	63
	28	57	73
	29	59	82
	30	61	91
	31	63	96
	32	65	98
	34	70	99
Civic Responsibility	13	24	1
	14	28	4
	15	31	6
	16	35	10
	17	38	15
	18	42	19
	19	46	28
	20	49	40
	21	53	54
	22	56	69
	23	60	84
	24	64	96

Subtest	Raw Score	Standardized Score	Percentile
Social Relationships	10	25	1
	11	30	4
	12	34	10
	13	39	14
	14	43	24
	15	48	38
	16	52	54
	17	57	70
	18	61	85
	19	66	97
Combined Subtests	58	26	1
	59	27	2
	60	28	4
	63	32	6
	64	33	9
	65	34	11
	67	37	13
	70	41	15
	71	42	20
	72	43	25
	73	44	27
	74	45	29
	75	47	31
	76	48	35
	77	49	41
	78	50	48
	79	52	54
	80	53	58
	81	54	63
	82	55	68
	83	57	70
	84	58	74
	85	59	78
	86	60	82
	87	61	87
	88	63	92
	89	64	95
	90	65	97
	91	66	99

Examination of Table 43 reveals that a combined subtests raw score of 72 fell into the 25th percentile as compared to a pretest combined subtests raw score of 67 falling into the 24th percentile. On the posttest it was necessary to score 79 to be in the 54th percentile, whereas a pretest score of 75 fell into the 55th percentile. A posttest raw score of 86 fell into the 82nd percentile and a pretest raw score of 80 fell into the 81st percentile. And, a posttest score of 91 fell into the 99th percentile as compared to a pretest score of 98 falling into

the 99th percentile. In comparing pre- and posttest data it should be noted that pretest data consisted of responses by students in five schools and posttest data consisted of data from students in three schools.

Evaluation of Inventory Form C

Inventory Form C was evaluated by participating ninth grade teachers in May 1975. Teachers were asked to complete a Survey Form which elicited their ratings of the following: directions for administration, readability, relevance, and reliability. The mean ratings, on a scale of 1.0 to 5.0, by teachers of the evaluative criteria are presented in Table 44.

Table 44

Ninth Grade Teacher Mean Ratings
of Evaluative Criteria for Inventory Form C

Evaluative Criteria	Mean Rating
Relevance to career development objectives	3.44
Coverage of key concepts/subgoals	3.44
Directions for administration	3.44
Directions to students	3.33
Freedom from bias	3.22
Readability	2.89
Reliability	2.78
Clarity of expression	2.78
Length	2.67
Scoring	2.56

Note. N = 8
Rating: 1.0 = low 5.0 = high

Inspection of Table 44 indicates the criteria which were rated low were readability, reliability, clarity of expression, length, and scoring. Ratings and comments of teachers indicated that directions for administration, directions to students, freedom from bias, relevance to career development objectives, and coverage of key concepts/subgoals were satisfactory. This evaluation was taken into consideration by project staff at the time modifications were made on Inventory Form C and the accompanying Administrator's Manual of Instructions - Form C.

Participating ninth grade teachers were also asked to rate each item as to whether it should be (a) eliminated, (b) modified, or (c) retained in the existing form. When recommending elimination or modification, teachers provided substitute items. The teacher evaluations of items are presented in Table 45.

Table 45

Ninth Grade Teacher Item Evaluation of Inventory Form C

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	0	6
2	0	2	4
3	0	0	6
4	0	0	6
5	0	1	5
6	0	0	6
7	0	1	5
8	0	0	6
9	0	2	4
10	0	0	6
11	0	1	5
12	0	0	6
13	0	0	6
14	0	1	5
15	0	0	6
16	0	0	6
17	0	0	6
18	0	0	6
19	0	0	6
20	0	2	4
21	0	0	6
22	0	0	6
23	1	0	5
24	0	0	6
25	0	0	6
26	0	0	6
27	0	0	6
28	0	1	5
29	0	1	5
30	0	0	6
31	0	1	5
32	0	0	6
33	0	0	6
34	0	0	6
35	0	0	6
36	0	0	6
37	0	1	5
38	0	2	4
39	1	0	5
40	0	1	5

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	6	0
2	0	6	0
3	0	6	0
4	0	6	0
5	0	6	0
6	0	6	0
7	0	6	0
8	0	6	0
9	0	6	0
10	0	6	0
11	0	1	5
12	0	0	6
13	0	1	5
14	0	0	6
15	0	0	6
16	0	0	6
17	0	0	6
18	0	0	6
19	0	0	6
20	0	0	6
21	0	0	6
22	0	1	5
23	0	0	6
24	0	0	6
25	0	0	6
26	0	0	6
27	0	0	6
28	0	0	6
29	0	0	6
30	0	0	6
31	0	0	6
32	0	0	6
33	1	1	4
35	0	0	6
36	0	0	6
37	0	0	6
38	0	0	6
39	0	0	6
40	0	1	5
41	0	0	6
42	0	2	4
43	1	0	5
44	0	1	5
45	0	0	6
46	1	1	4
47	0	0	6
48	0	0	6
49	0	1	5
50	0	1	5
51	0	0	6
52	0	0	6
53	0	0	6
54	0	0	6
55	0	0	6

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
56	0	0	6
57	0	0	6
58	0	0	6
59	0	0	6
60	0	0	6
61	0	0	6
62	0	0	6
63	0	0	6
64	0	0	6
65	1	1	4
66	0	0	6
67	0	1	5
68	0	0	6
69	0	0	6
70	0	0	6
71	0	1	5
72	0	0	6
73	0	2	4
74	0	1	5
75	0	0	6
76	0	0	6
77	1	0	5
78	2	0	4
79	1	0	5
80	0	1	5
1	0	0	6
2	0	0	6
3	0	0	6
4	0	0	6
5	0	0	6
6	0	0	6
7	0	0	6
8	0	0	6
9	0	0	6
10	0	0	6
11	0	0	6
12	0	0	6
13	0	0	6
14	0	1	5
15	0	0	6
16	0	0	6
1	0	0	6
2	0	0	6
3	0	0	6
4	0	1	5
5	0	0	6
6	0	0	6
7	0	1	5
8	0	0	6
9	0	0	6
10	0	0	6

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	0	1	5
2	0	1	5
3	0	0	6
4	0	0	6
5	0	1	5
6	0	1	5
7	0	0	6
8	0	0	6
9	0	0	6
10	0	0	6
11	0	0	6
12	0	0	6
13	0	0	6
14	0	0	6
15	0	0	6
16	0	0	6
17	0	2	4
18	0	0	6
19	0	0	6
20	0	0	6

Note. N = 6

Examination of Table 45 reveals that teachers recommended that roughly 5% of the items were in need of modification. They did not recommend that any items be eliminated. As with the survey results, these evaluations were noted for use in subsequent inventory modification.

In addition to teacher evaluations of items, an item analysis was performed using results from pilot testing with ninth graders. The results of the item analysis on Inventory Form C presented in Table 46 show the percent of correct responses for each item by subtest.

Table 46

Item Analysis of Inventory Form C by Subtest

Subtest	Item Number	Percent of Correct Responses
Self-Realization	1	34
	2	26
	3	40
	4	87
	5	40
	6	60
	7	73
	8	73
	9	100
	10	60
	11	0
	12	60
	13	40
	14	87
	15	73
	16	46
	17	26
	18	46
	19	93
	20	73
	21	67
	22	26
	23	80
	24	53
	25	73
	26	67
	27	60
	28	46
	29	40
	30	20
	31	40
	32	13
	33	67
	34	60
	35	73
	36	60
	37	73
	38	87
	39	67
	40	67
Economic Efficiency	1	18
	2	28
	3	38
	4	43
	5	53

Subtest	Item Number	Percent of Correct Responses
Economic Efficiency (continued)	6	55
	7	58
	8	25
	9	20
	10	43
	11	83
	12	45
	13	13
	14	67
	15	55
	16	65
	17	52
	18	51
	19	85
	20	82
	21	17
	22	40
	23	55
	24	15
	25	70
	26	42
	27	60
	28	7
	29	40
	30	30
	31	82
	32	58
	33	17
	34	30
	35	20
	36	40
	37	83
	38	72
	39	72
	40	30
	41	58
	42	21
	43	68
	44	60
	45	62
	46	78
	47	58
	48	83
	49	70
	50	60
	51	72
	52	78
	53	88
	54	68
	55	73

Subtest	Item Number	Percent of Correct Responses
Economic Efficiency (continued)	56	78
	57	75
	58	70
	59	82
	60	87
	61	35
	62	85
	63	62
	64	88
	65	68
	66	40
	67	82
	68	60
	69	62
	70	90
	71	52
	72	38
	73	93
	74	35
	75	40
	76	52
	77	57
	78	45
	79	62
	80	35
Social Relationships	1	57
	2	80
	3	52
	4	65
	5	78
	6	60
	7	88
	8	52
	9	68
	10	63
	11	63
	12	50
	13	43
	14	72
	15	82
	16	87
	1	93
	2	67
	3	67
	4	78
	5	33
	6	57
	7	58
	8	55
	9	60
	10	60

Subtest	Item Number	Percent of Correct Responses
Civic Responsibility	1	63
	2	58
	3	43
	4	67
	5	75
	6	55
	7	63
	8	72
	9	65
	10	55
	11	75
	12	48
	13	48
	14	53
	15	58
	16	40
	17	41
	18	77
	19	80
	20	68

Note. Criterion level is a 75% correct response rate.

Examination of Table 46 reveals that roughly 79% of all items on Inventory Form C failed to meet the criterion level of 75%. On the Self-Realization subtest 85% of the items needed modification as compared to 80% of the items on the Civic Responsibility subtest, 78% of the Economic Efficiency items, and 73% of the Social Relationships items. This information was used in modifying the inventory.

Reliability

Estimates of test reliability are obtained to establish the precision of a test as a measuring instrument. The reliability of any instrument refers to the extent that an individual would remain at the same relative place in a group in repeated measurements of the group. Therefore, the more reliable a test, the more consistently would an individual make the same or nearly the same score on the test, assuming no change in ability. To determine the reliability of Inventory Form C, correlation coefficients for pre- and posttest results on each of the four subtests were determined for experimental and control groups of ninth grade students. These data are presented in Table 47.

Table 47

Means, Standard Deviations, and Correlation Coefficients from Inventory Form C by Subtest and by Group

Subtest/Group	Mean		Standard Deviation		Correlation Coefficient
	Pre.[a]	Post.[b]	Pre.[a]	Post.[b]	
Self-Realization					
Experimental	16.08	16.96	2.29	2.75	.27
Control	15.66	22.58	2.77	5.26	.35
Economic Efficiency					
Experimental	25.33	25.42	3.61	4.58	.61
Control	21.85	16.69	4.35	3.04	.58
Civic Responsibility					
Experimental	19.41	20.35	2.52	2.79	.58
Control	17.08	16.89	3.34	3.04	.46
Social Relationships					
Experimental	15.73	15.78	4.35	2.07	.41
Control	14.54	14.51	2.72	3.40	.29
Total Test					
Experimental	75.98	78.51	6.08	7.98	.56
Control	69.17	69.76	9.24	9.91	.69

Note. [a]Pre. = Pretest
[b]Post. = Posttest

Inspection of Table 47 reveals that the Self-Realization subtest had the lowest correlation coefficient, next was the Social Relationship subtest, followed by the Social Relationships and Civic Responsibility subtests. This information was utilized in modifying Inventory Form C.

Validity

It was deemed important to determine whether Inventory Form C was measuring growth in those career development areas for which it was designed. The process of establishing the validity of any test is an ongoing process that requires the continuous gathering and evaluating of various types of evidence indicative of the performance of the test. Users of Inventory Form C are urged to conduct additional validation studies.

Content Validity. The high content validity of Inventory Form C arises from the fact that the items for the preliminary and modified versions of the inventory were keyed to the goals, subgoals, and objectives of the Career Development Continuum. The relationship between career development goals, subgoals, and objectives, and the 100 items which constitute Inventory Form C, after modification, is shown in Table 48.

Table 48

Relationship of Inventory Form C Items(I) to Career Development Goals(G), Subgoals(SG), and Objectives(O)

I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.
	(SR)				(EE)				(SR*)				(CR)		
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	2	27	2	1	-	52	3	1	-	77	4	1	-
3	1	1	2	28	2	1	-	53	3	1	-	78	4	1	-
4	1	1	2	29	2	1	-	54	3	1	-	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	2	1	31	2	2	-	56	3	2	-	81	4	2	-
7	1	2	2	32	2	2	-	57	3	2	-	82	4	2	-
8	1	2	2	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	1	84	4	3	1
10	1	3	1	35	2	3	1	60	3	3	1	85	4	3	-
11	1	3	2	36	2	3	2	61	3	3	2	86	4	3	-
12	1	3	2	37	2	3	2	62	3	3	2	87	4	3	-
13	1	4	1	38	2	4	1	63	3	4	1	88	4	4	1
14	1	4	1	39	2	4	1	64	3	4	-	89	4	4	-
15	1	4	2	40	2	4	2	65	3	4	-	90	4	4	-
16	1	4	2	41	2	4	2	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	1
18	1	5	1	43	2	5	-	68	3	5	1	93	4	5	-
19	1	5	2	44	2	5	-	69	3	5	2	94	4	5	-
20	1	5	3	45	2	5	-	70	3	5	2	95	4	5	-
21	1	6	1	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	2	47	2	6	-	72	3	6	-	97	4	6	-
23	1	6	3	48	2	6	-	73	3	6	-	98	4	6	-
24	1	6	3	49	2	6	-	74	3	6	-	99	4	6	-
25	1	2	1	50	2	2	1	75	3	3	1	100	4	3	-

Note. SR = Self-Realization
EE = Economic Efficiency
SR* = Social Relationships
CR = Civic Responsibility

Criterion-Related Validity. Criterion-related validity refers to establishing the relationship between scores obtained on a given test and those obtained on other specific external criterion measures generally associated with the attribute measured by the test. It was not possible to determine a criterion-related validity estimate as there were no external criteria available which could be used for comparison purposes with inventory scores.

Construct Validity. The construct validity of Inventory Form C was found by determining intercorrelations among the inventory subtests. The degree of intercorrelation between preliminary versions of the subtests was determined and is presented in Table 49.

Table 49

Intercorrelation Between Subtests of Inventory Form C

Subtest	Subtest				Total Test
	Self-Realization	Economic Efficiency	Civic Responsibility	Social Relationships	
Self-Realization	1.00				
Economic Efficiency	.17	1.00			
Civic Responsibility	.21	.52	1.00		
Social Relationships	.31	.06	.28	1.00	
Total Test	.58	.75	.74	.55	1.00

Inspection of Table 49 reveals that the intercorrelations between subtests of Inventory Form C ranged from a high of .52 (Civic Responsibility--Economic Efficiency) to a low of .06 (Social Relationship--Economic Efficiency). Because of the overlapping among career development goals, it is unrealistic to expect to find pure and completely independent subtests.

Revision of Synthesis of the Final Form of Inventory Form C

Modifications made on Inventory Form C were based on teacher evaluations and comments, as well as the item analysis. In revising items or adding new ones, wording was modified for clearer expression and to obtain a lower reading level. To facilitate inventory administration and scoring: (a) items were modified so that all were four-choice multiple choice items, each having only one correct response, (b) the number of items were reduced from 166 to 100, 25 items for each of four subtests, and (c) each item was given a one point value, making a total possible score of 100. The final form of Inventory Form C consists of 100 items, divided into four parts. Each part has 25 items, with four items for each of the six subgoals, and one item a repeated item to provide a check on reliability. The repeated items are as follows: items 6 and 25, 30 and 50, 59 and 75, and 85 and 100.

Modifications were also made in the Administrator's Manual of Instructions - Form C to present standard procedures to follow in administering and scoring the inventory. Inventory Form C was then administered to a small group of ninth grade students to verify readability. Results indicated modifications implemented were satisfactory in meeting the needs pointed out by teacher evaluations and the item analysis.

A copy of the Administrator's Manual of Instructions - Form C and a copy of Inventory Form C, with correct answers marked, appear as Appendices G and H of this report.

Inventory Form D

Results of Pilot Testing

Inventory Form D was administered to 214 twelfth grade students assigned to experimental and control groups in three schools on the island of Oahu and one school on the island of Hawaii. The tests were administered by regular classroom teachers who had received prior training. Tables 50 and 51 show the numbers of students in the pretest and posttest groups by school.

Table 50

Twelfth Grade Students Pretested by School

School	Experimental Group	Control Group	Total
Kaimuki	43	56	99
Konawaena	22	13	35
Nanakuli	21	27	48
Waipahu	17	15	32
Total	103	111	214

Table 51

Twelfth Grade Students Posttested by School

School	Experimental Group	Control Group	Total
Kaimuki	30	19	49
Total	30	19	49

Posttests from Konawaena, Nanakuli, and Waipahu schools were not returned to the project office. Field supervisors reported these tests were lost in the mail.

A perfect score of 110 was possible on Inventory Form D. Total possible scores for each subtest were as follows: Self-Realization, 24; Economic Efficiency, 40; Civic Responsibility, 26; and Social Relationships, 20. Pretest results, by school and by experimental and control groups on twelfth grade students for the four subtests representing the four goal areas of career development are presented in Table 52.

Table 52

Grade 12 Pretest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Konawaena	18.40	13.84	1.86	1.28	.39	.35	0.44	0.43	-0.75	-0.46
Kaimuki	17.88	17.58	1.95	1.97	.29	.26	-0.49	0.42	0.81	-0.12
Nanakuli	15.80	16.37	2.85	2.18	.62	.42	-0.15	-0.93	-0.72	-0.22
Waipahu	17.94	17.60	2.58	2.44	.62	.63	-2.22	-0.77	0.99	0.23
All Schools	17.58	16.85	2.40	2.34	.23	.22	-2.76	-0.52	1.04	-0.61
Economic Efficiency										
Konawaena	31.04	27.92	3.45	4.03	.73	1.11	0.31	-0.30	-0.28	-0.83
Kaimuki	29.11	29.05	4.73	5.12	.72	.68	-0.77	-3.85	-1.68	4.30
Nanakuli	20.80	21.07	6.15	6.92	1.34	1.33	-0.07	-0.54	-1.04	-0.73
Waipahu	25.35	25.20	5.36	5.10	1.30	1.31	0.33	-0.99	-0.32	0.74
All Schools	27.22	26.45	6.06	6.36	.59	0.60	-2.53	-3.85	-0.21	1.39
Civic Responsibility										
Konawaena	20.31	20.69	2.12	1.43	.45	.39	-0.70	-0.20	-0.58	-0.75
Kaimuki	20.23	18.78	2.32	2.46	.35	.33	0.70	0.06	-0.23	-0.85
Nanakuli	17.71	18.11	3.37	3.14	.73	.60	-1.98	-1.15	0.70	-0.22
Waipahu	19.00	19.13	3.51	2.61	.85	.67	0.13	-0.23	-0.68	-0.58
All Schools	19.54	18.89	2.89	2.65	.28	.25	-2.76	-1.88	2.70	-0.03
Social Relationships										
Konawaena	16.09	16.38	1.87	2.63	.39	.72	-0.85	-0.10	-0.68	-0.67
Kaimuki	16.39	15.30	1.62	1.93	.24	.25	-2.40	0.34	1.38	-0.66
Nanakuli	14.42	14.81	2.24	2.23	.49	.43	-0.12	-0.25	-0.46	-0.34
Waipahu	15.17	14.46	1.91	2.50	.46	.64	-1.55	0.28	-0.01	-0.15
All Schools	15.72	15.19	1.99	2.21	.19	.20	-2.86	0.29	0.05	-0.45
Combined Subtests										
Konawaena	85.81	78.84	5.47	6.49	1.16	1.80	-0.72	0.51	-0.10	-0.86
Kaimuki	83.86	81.28	6.33	8.22	.96	1.09	0.06	-0.11	-0.30	-0.39
Nanakuli	69.09	70.34	9.85	9.52	2.15	1.86	-0.83	-0.45	-0.84	-0.68
Waipahu	77.52	78.73	9.03	10.09	2.19	2.60	-0.90	-0.98	-0.12	0.81
All Schools	80.22	78.06	9.67	9.61	0.95	0.91	-3.58	-1.61	2.02	0.73

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Examination of Table 52 reveals that, overall, there is very little difference between pretest results of experimental and control groups within a school. However, both experimental and control groups in Nanakuli scored slightly lower than other schools, and experimental and control groups in Kaimuki scored slightly higher than other schools. These differences were not significant. The non-significant differences were expected as the testing design called for both control and experimental groups to be at equivalent career development levels prios to treatment. Posttest results from experimental and control groups of students at Kaimuki are presented in Table 53.

Table 53

Grade 12 Posttest Results by Subtest and by School

Subtest/School	M		S.D.		S.D.(M)		Skewness		Kurtosis	
	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]	Exp.[a]	Con.[b]
Self-Realization										
Kaimuki	19.06	18.26	2.34	2.40	.42	.55	0.61	-3.87	0.15	4.89
Economic Efficiency										
Kaimuki	30.30	28.52	4.14	5.14	.75	1.18	-0.19	-1.88	-0.02	0.32
Civic Responsibility										
Kaimuki	20.40	20.00	2.19	3.24	.40	0.74	-1.21	-1.01	-0.06	0.10
Social Relationships										
Kaimuki	16.16	15.68	2.65	2.26	.48	.51	-2.80	0.03	3.04	-1.50
Combined Subtests										
Kaimuki	86.13	82.84	8.09	8.73	1.47	2.00	-0.96	-2.04	0.63	1.23

Note. [a]Exp. = Experimental Group
[b]Con. = Control Group

Inspection of Table 53 reveals that, overall, the experimental group scored slightly higher than the control group at Kaimuki. This was also true of pretest results of the two groups. Table 54 presents means, standard deviations, and t tests for twelfth grade groups for comparisons between pre- and posttest results.

Table 54

Means, Standard Deviations, and t Tests
for Twelfth Grade Experimental and Control Groups by School

School/Group	M		S.D.		t
	Pretest	Posttest	Pretest	Posttest	
Kaimuki					
Experimental	84.1	87.6	6.95	6.87	2.762*
Control	83.3	84.5	7.84	6.58	0.995

Note. * $<$ .10

Inspection of Table 54 reveals there were no significant differences between pre- and posttest means of the control group, but the opposite was true of the experimental group. The non-significant results are probably a function of insufficient treatment time which was only a one month period. The significant difference between pre- and posttest means of the experimental group are probably not solely a function of treatment as the time span between tests was only one month, but the significant difference could be due to a combination of many career development experiences undergone by the experimental group, which included the Career Development Continuum Curriculum Guide experiences as well as others.

Standardization.

Raw scores of twelfth grade students were converted to standardized scores and percentile rankings. For comparison purposes, both pretest and posttest scores were converted. Table 55 presents the pretest raw scores, standardized scores, and percentile rankings by subtest; Table 56 presents the same breakdowns for posttest scores.

Table 55

Twelfth Grade Pretest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	11	23	1
	12	27	4
	14	35	7
	15	39	12
	16	43	22
	17	48	37
	18	52	54
	19	56	71
	20	60	83
	21	64	94
	22	68	99
Economic Efficiency	10	21	1
	13	26	2
	14	28	3
	15	30	5
	16	31	7
	17	33	8
	19	36	9
	20	38	10
	21	40	12
	22	41	17
	23	43	24
	24	45	30
	25	46	36
	26	48	41
	27	50	44
	28	51	48
	29	53	54
	30	55	63
	31	56	70
	32	58	76
	33	60	81
	34	61	87
	35	63	93
	36	65	97
	37	66	99
	38	68	99
Civic Responsibility	9	13	1
	11	20	1
	13	27	2
	14	31	4
	16	38	10
	17	41	17
	18	45	27
	19	48	38
	20	52	52
	21	55	69

Subtest	Raw Score	Standardized Score	Percentile
Civic Responsibility (continued)	22	59	83
	23	62	91
	24	65	95
	25	69	98
	26	72	99
Social Relationships	10	21	1
	11	26	2
	12	31	7
	13	36	11
	14	41	17
	15	46	33
	16	51	51
	17	56	69
	18	61	88
	19	66	99
Combined Subtests	49	18	1
	53	22	1
	56	25	2
	57	26	3
	60	29	4
	61	30	6
	63	32	8
	64	33	9
	67	36	10
	69	38	11
	71	40	13
	72	41	16
	73	42	18
	74	44	20
	75	45	22
	76	46	27
	77	47	31
	78	48	34
	79	49	40
	80	50	44
	81	51	47
	82	52	51
	83	53	54
	84	54	59
	85	55	68
	86	56	73
	87	57	76
	88	58	79
	89	59	82
	90	60	85
	91	61	89
	92	62	93
	93	63	95
	94	64	96
	95	65	98
	97	67	99

Examining Table 55 reveals that a combined subtests raw score of 76 falls into the 27th percentile, a raw score of 82 falls into the 51st percentile, a raw score of 87 falls into the 76th percentile, and a raw score of 97 falls into the 99th percentile. These were compared with posttest scores and percentile rankings which are presented in Table 56.

Table 56

Twelfth Grade Posttest Raw Scores Converted to Standardized Scores and Percentiles by Subtest

Subtest	Raw Score	Standardized Score	Percentile
Self-Realization	10	15	3
	16	40	8
	17	45	16
	18	49	37
	19	53	58
	20	57	79
	21	62	97
Economic Efficiency	16	25	3
	19	31	8
	22	37	13
	23	39	18
	26	45	24
	28	49	29
	29	51	37
	30	53	45
	31	55	63
	32	57	84
	34	61	92
	36	65	97
Civic Responsibility	12	25	3
	16	37	8
	17	41	18
	19	47	32
	20	50	47
	21	53	63
	22	56	71
	23	59	79
	24	63	89
	25	66	97
Social Relationships	13	38	13
	14	42	34
	15	47	47
	17	56	58
	18	61	79
	19	65	97
Combined Subtests	58	21	3
	72	37	8
	73	38	13
	78	44	18
	79	45	24
	80	47	29
	81	48	37
	83	50	47
	84	51	55
	86	54	61
	87	55	66
	90	58	74
	91	60	82
	92	61	89
	94	63	97

Inspection of Table 56 and a comparison of it with Table 55 reveals that a pretest combined subtests raw score of 76 fell into the 27th percentile as compared to a posttest raw score of 79 falling into the 24th percentile. A posttest raw score of 84 fell into the 55th percentile, whereas the same score on the pretest fell into the 59th percentile. It was necessary to score 90 to be in the 74th percentile in the posttest group, and it was necessary to score 87 to be in the 76th percentile in the pretest group. Finally, a pretest score of 94 fell into the 96th percentile as compared to the same posttest raw score falling into the 97th percentile. In comparing pre- and posttest data it should be noted that pretest data consisted of responses by students in four schools and posttest data consisted of data from only one school.

Evaluations of Inventory Form D

Participating twelfth grade teachers completed a questionnaire designed to elicit their evaluation of Inventory Form D. Teachers were asked to rate, on a scale of 1.0 to 5.0, such evaluative criteria as readability, length, scoring, and reliability. Table 57 presents the mean ratings on the evaluative criteria.

Table 57

Twelfth Grade Teacher Mean Ratings of Evaluative Criteria for Inventory Form D

Evaluative Criteria	Mean Rating
Freedom from bias	3.63
Length	3.63
Coverage of key concepts/subgoals	3.57
Directions for administration	3.38
Readability	3.38
Relevance to career development objectives	3.13
Clarity of expression	3.25
Directions to students	3.14
Scoring	2.71
Reliability	2.38

Note. N = 8
Rating: 1.0 = low 5.0 = high

Inspection of Table 57 reveals that scoring and reliability were the only criteria rated relatively low. In addition, teacher comments indicated that the scoring needed to be simplified, a lower reading level was needed, and there were some ambiguous items which needed clarification. The teacher comments and ratings were noted for subsequent inventory modifications.

Participating twelfth grade teachers were also asked to rate each inventory item as to whether it should be (a) eliminated, (b) modified, or (c) retained in the existing form. When recommending elimination or modification, teachers provided substitute items. The teacher evaluations are presented in Table 58.

Table 58

Twelfth Grade Teacher Item Evaluation
of Inventory Form D

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
1	1	1	1
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
6	1	1	1
7	1	1	1
8	1	1	1
9	1	1	1
10	1	1	1
11	1	1	1
12	1	1	1
13	1	1	1
14	1	1	1
15	1	1	1
16	1	1	1
1	0	0	3
2	0	0	3
3	0	1	2
4	0	0	3
5	0	0	3
6	0	1	2
7	0	0	3
8	0	0	3
9	0	0	3
10	0	0	3
11	0	1	2
12	0	0	3
13	0	0	3
14	0	0	3
15	0	0	3
16	0	0	3
1	0	0	3
2	0	0	3
3	0	0	3
4	0	3	0
5	0	0	3
6	0	1	2
7	0	0	3
8	0	0	3
9	0	0	3
10	0	0	3
11	0	0	3
12	0	0	3
13	0	0	3
14	0	0	3
15	0	0	3
16	0	0	3

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
17	0	0	3
18	0	1	2
19	0	0	3
20	0	0	3
21	0	0	3
22	1	1	1
23	0	0	3
24	0	1	2
25	0	0	3
26	0	0	3
27	0	0	3
28	0	2	1
29	0	0	3
30	0	0	3
31	0	0	3
32	0	0	3
33	0	0	3
34	0	0	3
35	0	0	3
36	0	0	3
37	0	0	3
38	0	0	3
29	0	0	3
40	0	1	2
1	0	1	2
2	0	0	3
3	0	0	3
4	0	0	3
5	0	0	3
6	1	0	2
7	0	0	3
8	0	0	3
9	0	0	3
10	0	1	2
11	9	1	2
12	0	0	3
13	0	0	3
14	0	0	3
15	0	0	3
16	0	0	3
1	0	0	3
2	0	0	3
3	0	0	3
4	0	0	3
5	0	0	3
6	0	0	3
7	0	0	3
8	0	0	3
9	0	0	3
10	0	0	3
1	0	1	2
2	0	0	3
3	0	0	3
4	0	0	3
5	0	0	3

Item Number	Item Evaluation		
	Eliminate	Modify	Retain
6	0	0	3
7	0	0	3
8	0	0	3
9	0	0	3
10	0	0	3
11	0	0	3
12	0	0	3
13	0	0	3
14	0	0	3
15	0	0	3
16	0	0	3
17	0	1	2
18	0	0	3
19	0	0	3
20	0	0	3

Note. N = 3

Inspection of Table 58 reveals that teachers recommended that roughly 2% of the items needed modification. They did not recommend that any items be eliminated.

In addition to the teacher evaluations, an item analysis was performed using results from pilot testing with twelfth graders. Results of the item analysis on Inventory Form D presented in Table 59 show the percent of correct responses for each item by subtest.

Table 59

Item Analysis of Inventory Form D by Subtest

Subtest	Item Number	Percent of Correct Responses
Self-Realization	1	71
	2	38
	3	87
	4	75
	5	88
	6	87
	7	18
	8	92
	9	95
	10	97
	11	25
	12	88
	13	33
	14	95
	15	92
	16	43
	1	80
	2	75
	3	83
	4	73
	5	77
	6	70
	7	77
	8	82
	9	80
	10	75
	11	83
	12	73
	13	77
	14	70
	15	77
	16	82
Economic Efficiency	1	87
	2	88
	3	90
	4	57
	5	83
	6	80
	7	47
	8	90
	9	45
	10	63
	11	40
	12	45
	13	72
	14	56
	15	55
	16	62

Subtest	Item Number	Percent of Correct Responses
Economic Efficiency (continued)	17	55
	18	88
	19	87
	20	47
	21	83
	22	57
	23	80
	24	98
	25	92
	26	82
	27	72
	28	67
	29	46
	30	82
	31	55
	32	87
	33	65
	34	87
	35	45
	36	33
	37	15
	38	88
	39	83
	40	25
Social Relationships	1	32
	2	47
	3	57
	4	50
	5	75
	6	53
	7	70
	8	32
	9	70
	10	65
	11	60
	12	40
	13	75
	14	72
	15	32
	16	72
	1	90
	2	75
	3	85
	4	63
	5	47
	6	82
	7	65
	8	47
	9	57
	10	57

Subtest	Item Number	Percent of Correct Responses
Civic Responsibility	1	73
	2	70
	3	58
	4	80
	5	87
	6	62
	7	60
	8	65
	9	58
	10	38
	11	83
	12	40
	13	53
	14	57
	15	62
	16	63
	17	35
	18	75
	19	85
	20	62

Note. Criterion level is a 75% correct response rate.

Inspection of Table 59 reveals that roughly 57% of all Inventory Form D items did not meet criterion level of 75%. On the Social Relationships subtest, roughly 77% of the items needed modification, as compared to 75% of the Civic Responsibility items, 55% of the Economic Efficiency items, and 31% of the Self-Realization items.

Reliability

Estimates of test reliability are obtained to establish the precision of a test as a measuring instrument. The reliability of any instrument refers to the extent that an individual would remain at the same relative place in a group in repeated measurements of the group. Therefore, the more reliable a test, the more consistently would an individual make the same or nearly the same score on the test, assuming no change in ability. To determine the reliability of Inventory Form D, correlation coefficients for pre- and posttest results for each of the four subtests were determined for experimental and control groups of twelfth grade students. These data are presented in Table 60.

Table 60

Means, Standard Deviations, and Correlation Coefficients from Inventory Form D by Subtest and by Group

Subtest/Group	Mean		Standard Deviation		Correlation Coefficient
	Pre.[a]	Post.[b]	Pre.[a]	Post.[b]	
Self-Realization					
Experimental	18.07	19.34	2.26	2.26	.32
Control	18.05	18.23	1.78	2.48	.21
Economic Efficiency					
Experimental	29.19	30.96	5.02	3.61	.44
Control	29.35	29.64	3.93	3.99	.81
Civic Responsibility					
Experimental	20.11	20.69	2.16	1.97	.56
Control	20.05	20.47	2.60	2.76	.85
Social Relationships					
Experimental	16.50	16.46	1.47	1.98	.64
Control	15.88	15.76	2.17	2.27	.65
Total Test					
Experimental	84.15	87.65	6.95	6.87	.58
Control	83.35	84.52	7.84	6.58	.80

Note. [a]Pre. = Pretest
[b]Post. = Posttest

Examination of Table 60 reveals a relatively high degree of reliability for each of the subtests, with the exception of the Self-Realization subtest, based on comparisons of pre- and posttest results. The Self-Realization subtest was the lowest of the four with correlation coefficients for experimental and control groups of .32 and .21, respectively. This information was noted for use by staff when modifying the inventory.

Validity

It was deemed important to determine whether the inventory was measuring growth in those career development areas for which it was designed. The process of establishing the validity of any test is an ongoing process that requires the continuous gathering and evaluating of various types of evidence indicative of the performance of the test. Users of Inventory Form D are urged to conduct additional validation studies.

Content Validity. The high content validity of Inventory Form D arises from the fact that the items for the preliminary and modified versions of the inventory were keyed to the goals, subgoals, and objectives of the Career Development Continuum. The relationship between career development goals, subgoals, and objectives, and the 100 items which constitute Inventory Form D, after modification, is shown in Table 61.

Table 61

Relationship of Inventory Form D Items(I) to Career Development Goals(G), Subgoals(SG), and Objectives(O)

I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.
	(SR)				(EE)				(SR*)				(CR)		
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	1	27	2	1	-	52	3	1	1	77	4	1	-
3	1	1	1	28	2	1	-	53	3	1	2	78	4	1	-
4	1	1	2	29	2	1	-	54	3	1	2	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	2	1	31	2	2	-	56	3	2	-	81	4	2	-
7	1	2	1	32	2	2	-	57	3	2	-	82	4	2	-
8	1	2	2	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	1	84	4	3	1
10	1	3	1	35	2	3	1	60	3	3	-	85	4	3	-
11	1	3	2	36	2	3	2	61	3	3	-	86	4	3	-
12	1	3	2	37	2	3	2	62	3	3	-	87	4	3	-
13	1	4	1	38	2	4	1	63	3	4	1	88	4	4	1
14	1	4	1	39	2	4	-	64	3	4	-	89	4	4	-
15	1	4	2	40	2	4	-	65	3	4	-	90	4	4	-
16	1	4	2	41	2	4	-	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	1
18	1	5	1	43	2	5	1	68	3	5	1	93	4	5	-
19	1	5	2	44	2	5	2	69	3	5	2	94	4	5	-
20	1	5	3	45	2	5	2	70	3	5	2	95	4	5	-
21	1	6	1	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	1	47	2	6	-	72	3	6	1	97	4	6	-
23	1	6	2	48	2	6	-	73	3	6	-	98	4	6	-
24	1	6	2	49	2	6	-	74	3	6	-	99	4	6	-
25	1	2	1	50	2	1	-	75	3	3	1	100	4	2	-

Note. SR = Self-Realization
EE = Economic Efficiency
SR* = Social Relationships
CR = Civic Responsibility

Criterion-Related Validity. Criterion-related validity refers to establishing the relationship between scores obtained in a given test and those obtained on other specific external criterion measures generally associated with the attribute measured by the test. It was not possible to determine a criterion-related validity estimate as there were no external criteria available which could be used for comparison purposes with inventory scores.

Construct Validity. The construct validity of Inventory Form D was found by determining intercorrelations among the inventory subtests. The degree of intercorrelation between preliminary versions of the subtests was determined and is presented in Table 62.

Table 62

Intercorrelation Between Subtests of Inventory Form D

Subtest	Subtest				Total Test
	Self-Realization	Economic Efficiency	Civic Responsibility	Social Relationships	
Self-Realization	1.00				
Economic Efficiency	-.08	1.00			
Civic Responsibility	.57	-.14	1.00		
Social Relationships	.44	-.25	.74	1.00	
Total Test	.71	.41	.69	.58	1.00

Examination of Table 62 reveals that the intercorrelations between subtests of Inventory Form D are relatively low, with the exception of the intercorrelation between the Social Relationships and Civic Responsibility subtests. Thus, despite the overlapping of the four career development goal areas, this test had relatively pure measures in three areas. Since the four goal areas of the Career Development Continuum are closely interrelated, it is unrealistic to expect to find completely pure and independent subtests.

Revision and Synthesis of the Final Form of Inventory Form D

The item analysis and teacher evaluations and comments formed the basis for modifying Inventory Form D. In revising items or adding new items, wording was modified for clearer expression and to remove ambiguities, as well as to obtain a lower reading level. To facilitate inventory administration and scoring: (a) items were modified so that all were four-choice multiple choice items, each having only one correct response, (b) the number of items was reduced from 188 to 100 items, 25 items for each of the four subtests, and (c) each item was given a one point value, making a total possible score of 100. The final form of Inventory Form D consists of 100 items, in four parts. Each part has 25 items, with four items for each of the six subgoals, and one item a repeated item to provide a check on reliability. The repeated items are as follows: Items 6 and 25, 29 and 50, 59 and 75, and 81 and 100.

The Administrator's Manual of Instructions - Form D was modified presenting standard procedures to follow in administering and scoring the inventory. Invencory Form D was then administered to a small group of twelfth grade students. Results indicated all items were appropriate for a twelfth grade reading ability.

A copy of the Administrator's Manual of Instructions - Form D and a copy of Inventory Form D, with correct answers marked, appear as Appendices I and J of this report.

A PROJECT EVALUATION REPORT

Preparatory Activities for Implementing The Hawaii Career Development Continuum In Hawaii's Schools

Submitted to

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PROJECT EVALUATION REPORT

Hawaii Career Development Continuum Project

Phase III

Introduction

The Hawaii State Department of Education has undertaken a systematic effort to integrate a comprehensive program of career education into the State of Hawaii's schools. This effort envisioned a sequential, step by step approach that would involve various phases over an extended period of time. This procedure is intended to insure an efficient and effective utilization of a comprehensive career development program.

The overall effort has come to be known as the Career Development Continuum Project (CDC). The project was implemented under provisions of P.L. 90-576, Part C. with funds awarded to the State Board of Vocational Education and sponsored by the State Department of Education. The project has been conducted by the Educational Research and Development Center and the Department of Educational Psychology of the College of Education, University of Hawaii, under contract to the State Department of Education. The University of Hawaii appointed Dr. T. Antoinette Ryan as project coordinator.

The initial phases produced 1) a career development model and conceptual framework, Kindergarten through grade 14, and 2) a set of related curriculum guides for school implementation, Kindergarten through grade 12. The project under consideration in this evaluation report is Phase III in the total systematic effort. The elements developed in previous phases were to be utilized in Phase III involving the following (Memorandum of Agreement, May, 1974):

1. inservice training of personnel
2. development of testing materials and instruments
3. evaluation and revision of the model and guides

Sources for the Evaluation Report

Information for this report was obtained from the following sources:

1. Review of CDC documents from previous phases:

   A Conceptual Framework for a Career Development Continuum K-14 for Hawaii's Schools

   Hawaii Career Development Continuum Curriculum Guide K-3

   Hawaii Career Development Continuum Curriculum Guide 4-6

   Hawaii Career Development Continuum Curriculum Guide 7-9

2. Career Development Continuum Project 1974 Workshop Syllabus

3. Materials and content used in 1974 Workshops, including handouts, references, agenda outlines, descriptions of procedures, methods and techniques.

4. Summary Report of Individual Workshop and Combined Workshops Data collected by the project coordinator.

5. Personal contact with the project coordinator and her staff.

6. Observations of the inservice program including discussion with program participants.

7. Preliminary copies of a Career Development Inventory battery.

8. Report of findings from pilot testing of the Career Development Inventory.

9. Revised Hawaii Career Development Continuum Curriculum Guides.

The Inservice Training Program

The Department of Education and the University of Hawaii collaborated on arrangements for the training program. The basic format for instruction and the target population for the program were agreed upon after reviewing resources available and imposed constraints. It was decided to offer a series of orientation workshops through the University of Hawaii, Manoa and Hilo, Division of Continuing Education and Community Services, and the Department of Educational Psychology. Dr. Ryan and her staff were responsible for defining the specific program objectives, developing the staff development procedures and materials, and implementing the program as planned.

The program series consisted of seven 2-day workshops which were designed to make some initial impact on a representative number of schools. Therefore, all seven major districts in the State of Hawaii were chosen for participation in the program. A two day workshop for one semester hour credit offered through the University of Hawaii's Center for Continuing Education was judged to be a feasible time commitment and reasonable incentive. Any school personnel in the designated areas, regardless of position assignment, could participate for credit or non-credit. The nature of the workshop did pose some restrictions on the number of participants.

The seven 15 hour workshops were held on Fridays and Saturdays, October through December 1974. The same basic instructional and staff development procedures were used in each workshop.

Factors Evaluated

This evaluation report will attend to the following factors and provide a summary of concluding remarks:

Staff Development Rationale

Selection of Participants

Organization of Workshops

Goals and Objectives of the Workshops

Process Evaluation

Outcome Evaluation

Staff Development Rationale

The career development workshops were described as one of a series of orientation experiences for school personnel. The specific intent seemed to be the implementation of the set of curriculum guides for elementary and secondary personnel. This mission is well documented in the workshop syllabus. The attention given to the concept of career development and systematic curriculum development scheme was well founded and developed. In this reviewer's opinion, they are high quality products.

However, preoccupation with the career development continuum framework may have caused a channeled view that has ignored some important development needs. There is no evidence of the typical staff development concerns such as the following:

1. Needs assessment of staff
2. Procedure for selection of participants
3. Differential needs of groups e.g. teachers, counselors, or administrators
4. Identification of competencies and attitudes required for goal achievement
5. Longitudinal and followup activities
6. Suggested school, group, and individualized programs
7. Integration of staff development within implementation plan
8. Provision of resources and a continuing education plan to support inservice activities

The most serious indictment may be the failure to provide an overall plan and/or rationale for staff development. Discussions with the

project coordinator suggested that some consideration had been given to a systematic staff development program by the University of Hawaii and DOE coordinators but documentation or other evidence of such a commitment were not available.

Selection of Participants

The career development workshops were organized around Hawaii's seven districts (regions). Specific school participation was not controlled. This plan did guarantee a spreadoff effect to the total state. All districts solicited participation of school personnel from elementary and secondary schools. Within the limitations of workshop size, this approach seemed reasonably effective.

Since the major concern of the project was the implementation of curriculum guides, a more selective process for workshop participation may have contributed more specific school building/unit implementation. Participation may have been organized around school units and representation of different school personnel. What are the critical school personnel needed to implement a program of career development in a particular school unit? From this point of departure each school unit could develop its own implementation plan, including their own individualized staff development program. This approach would have assured the important mixture of leadership, instruction, and guidance staff. Followup and continued progress activities could be better followed up on the basis of a building or unit approach. Workshop goals and instructional processes could have featured this point of departure. In light of the participation groups (See Summary Report), this would have been a viable and easily administered contingency.

Organization of Workshops

The Hawaii DOE and project coordinator should be credited with an outstanding job of workshop organization. This aspect is documented in the participants response in the Summary Report and feedback received by the evaluator from workshop participants. The length of the workshop was feasible (15 hours), Friday evening and all day Saturday. Most of the facilities and supportive arrangements were conducive to the type of instructional activities used. The various incentives employed including college credit and personal recognition were evidently effective. The motivational level seemed to be relatively high. This motivation may have varied somewhat according to area or group. The workshops seemed especially meaningful to classroom teachers and counselors and less appropriate for administrators and college trainers (teacher educators and counselor educators). Again, this may not be the organization of the workshops but rather consideration for rationale and selection.

Participant ratings of program factors (Table 9, Summary Report) support a positive attitude toward program organization. "Pre-workshop information" received the lowest rating. This is understandable considering the press of the workshop activities.

The DOE and district administrative support for the workshops was good. Their participation in various components of the program lent credence to the career development commitment. The utilization of administrative staff may have been further enhanced by a preliminary staff development program for administrative personnel.

Goals and Objectives of the Workshops

There is no question that goals and objectives were stated and systematically developed. The Syllabus for 1974 Workshops provides an excellent outline of the workshop objectives. The goal for the workshops was:

> To develop participants understanding of career development and to increase their capabilities of infusing career development into the existing curriculum.

The basic assumption that this is the only or most prominent goal could be challenged. Is this the only implementation goal for career development? Is this goal the result of a feasibility or priority study? The evaluator had no indication of any such study and suspects that none has been undertaken. Some critics would point up that infusion of career development into the existing curriculum is but one goal of career development.

Assuming the central focus of the goal statement leads to subgoals and performance objectives as stated in the syllabus, the following is an example of this procedure:

> Subgoal 2: For participants to understand the importance of and be motivated to utilize career development learning experiences in the classroom.
>
> Objective 2.3: Given a 40 minute task assignment on cooperation, participants will demonstrate their awareness of the need for cooperative efforts of teachers and/or administrators, counselors, instructors, and community persons in delivering learning experiences to learnee by correctly responding to questions 19-26, and 28 (Section 2) on the Inventory of Educational Improvement.

The sequence of instruction included excellent evaluation procedures for each objective. The Workshops were readily amenable to outcome evaluation.

Process Evaluation

There were a variety of techniques employed to achieve the workshops objectives. The match of the type of techniques with the objective seemed appropriate. On a 1.0 (not worthwhile) to 4.0 (extremely worthwhile) scale the participants rated the workshop activities 3.35 (Table 7, Summary Report). "Reading assigned reference materials" (3.08) and "viewing career education materials" (3.10) were rated lowest. "Participating in task groups" (3.70) was rated highest. The

high rating of the task group participation is representative of the basic thrust employed in the workshops. A great deal of effort was given to organizing workshop activities into task groups. This allowed the participants to achieve a sense of ownership and feel that they were capable of employing the career development continuum in their schools. This performance emphasis in the processes was in keeping with the objectives outlines in the syllabus.

Staff and resource personnel were rated on Content Mastery and Communication Skill scales (1.0 poor to 4.0 outstanding). The mean rating on Content Mastery was 3.49 and the mean rating for Communication Skill was 3.50 (Table 8, Summary Report). The participants' rating of staff and resource personnel indicated an exceptional positive reaction to those involved in the program activities. The ratings of Training Process Factors (Table 10, Summary Report) summarized various workshop elements. All were ranked above 3.00 on a 4.00 scale. The overall ratings of the training processes were very positive.

There were some variations of participants' responses by workshop setting. The make up of the participant roster may have demanded special consideration be given to certain characteristics of personnel in some of the districts (See Table 2, Summary Report). Again, this situation may have been best handled by a workshop participant selection procedure.

Outcome Evaluation

The training objectives of the workshops were stated in terms of performance behaviors. As indicated earlier, this approach lends itself to outcome evaluation. Outcome data were collected in two basic goal areas: Acquired Knowledge and Developed Skills. Two basic evaluation procedures were used: Perceived Self-Evaluation and Objective Test Responses.

Self-evaluation techniques indicated that the participants felt they had acquired the necessary knowledge and skills to implement the career development continuum. A combined 88.69 percent expressed this positive belief (Table 3, Summary Report). On a scale for the self-evaluation of achievement of training objectives, a 3.40 average was reported on a 4.00 scale (Table 4, Summary Report).

However, results from the objective test evaluation were not so conclusive. The mean score for all seven workshops was approximately 70 percent for Knowledge, 66 percent for Skill and almost 68 percent for Knowledge and Skill combined. This is slightly below the criterion level of 70 percent (Table 5, Summary Report). Considerable variation existed among workshop sites in their response to the objective tests. Likewise there was considerable variation in response to the two outcome areas: Acquisition of Knowledge and Development of Skills.

The contrasting results and variability on the objective tests casts some doubts about the test's validity. Observed performance by the project staff and the evaluator would tend to support the participants' self-evaluation.

Conclusions

Within the context of the workshop objectives the inservice program was successful. There is ample evidence that the DOE and the University of Hawaii have achieved some preliminary implementation goals.

To state that the Career Development Continuum Project has implemented career education into the State of Hawaii's Schools would be an over generalization. Considerable readiness has been established. However, a more systematic, unit by unit (school buildings) approach would be needed before any immediate or significant impact could be noticed. The success of this particular inservice program is promising.

A staff development needs assessment is still needed. This is especially true now that some staff members have received some training. The differences among staff members regarding competencies in career education has now increased. Further staff development activities are needed but this may now require differentiated approaches. School administrators must become involved or the leadership at the local level will suffer. Their participation in this evaluated workshop was certainly minimal.

A major strength of this workshop approach was the amount of guided participant involvement. This enabled the staff in training to relate to the CDC conceptual framework and the Guide Materials. As participants took responsibility for integrating activities, a sense of ownership and willingness to risk was noted. It was evident that a great majority of staff members felt comfortable with the career education approach. Many of these people could be used in further staff/inservice training activities. A follow up procedure would help clarify the possibilities in this area.

This series of workshops should be encouraged. Likewise the stimulation created in the local schools deserves systematic, in-depth commitment and support. Follow up and continued activities are definitely needed.

Development of Testing Materials and Instruments

An objective test battery was developed for grades 3, 6, 9, and 12. There is a 100 item form for each grade level. Four items represent each of six subgoals from the four career development goals of the Career Development Continuum Model. One item in each goal area is repeated for a reliability check.

The battery was developed by the following process:

1. Review of existing instruments and the development of prototype instruments.

2. Selection and construction of items for a preliminary version of a four subtest inventory.

3. Administration of a preliminary Career Development Inventory to experimental and control groups of students (April, 1975).

4. Administration of a Teacher Survey Form that gathered teachers' reactions to the Inventory and an evaluation of each item in each of the subtests.

5. Item analysis based upon student group responses.

6. Revision of items as indicated by student and teacher responses; also, keyed items to subgoals and modified directions for administration and scoring.

7. Administration of the Career Development Inventory battery to experimental and control groups of students (June, 1975).

8. Revision as test data indicated.

The result of this process was a Career Development Inventory battery that included Form A for grade 3, Form B for grade 6, Form C for grade 9, and Form D for grade 12. An Administrator's Manual of Instructions accompanies each form.

Developmental Concerns

A developer of a new sequential career development battery can expect to encounter some difficulties. First, similar career development batteries are not available for modeling or for cross validation. This area of test development is in its infancy. Research reports, consultation, and expert opinion in career development evaluation is lacking. It is understandable that an earlier national search inquiry by the inventory developer provided little assistance.

Secondly, the goal areas of the Career Development Continuum are relatively unique. The content validity of the battery was greatly enhanced by relating the items to the subgoals. The lack of knowledge about the flow of developmental elements as one proceeds from early childhood to adulthood makes item construction difficult. The same concerns were probably faced when the Career Development Continuum Curriculum Guides were developed. However, a testing battery will predetermine expectancies and influence the setting of developmental goals.

Lastly, new concepts and vocabulary will be included in such a battery. It may be difficult to determine if "readability" level is not just the function of lack of treatment (process of career development programs). There will be more of this readability concern in primary years where reading problems already exist. It is also possible that the Career Development Continuum goal areas represent more abstract concepts than usually found in other curriculum areas. In particular the goal areas of self-realization, social relationships and civic responsibility may contain many abstract concepts.

Utilization of Developmental Data

An experimental-control comparison is a rigorous test for this instrument development process. While this method may be desirable

for idealized test development and program evaluation, it does not seem to be an appropriate method for a situation where the adequacy of the treatment process can be questioned. However, it is doubtful that the comparison was the primary input for item revision. The teachers' reactions on the Teacher Survey Form and the item analysis data would seem to be more helpful at this stage of development. Student performance data from next year may allow another experimental-control design to be employed at that time.

The preliminary data (April, 1975) seemed to focus attention on readability, reliability, clarity, length, and scoring. This evaluator is concerned that the lack of experience with career development concepts, both students and teachers, may unduly suppress and constrict the scope of the instrument. Staff development programs and intensified career development programs may run pupils' scores to the ceiling of the battery.

Test Development and Program Evaluation

The development of a feasible testing battery for Career Development Continuum goal areas is an admirable research and development accomplishment. The fundamental instrument development process was sound, and considering the exploratory nature of the area, the results are extremely promising. A sequential testing of the Career Development Continuum subgoals will place school programs of career development in a comparable perspective with other curriculum objectives. The availability of evaluation procedures will give impetus to career development program implementation. Few evaluation instruments have been related to subgoals of instruction such as represented in the Career Development Inventory battery. This state of Hawaiian integration of rationale, model, curriculum guides, staff development, and evaluation is an outstanding program development capstone for the implementation of career development philosophy.

Other career development evaluation procedures will need to be employed. It is hoped that the impact of the Career Development Inventory will not be to over-simplify the career development program evaluation procedure. Some fundamental assumptions of the career development philosophy would suggest a number of evaluation procedures be used. The development of the Career Development Inventory battery should be a beginning not an end for program evaluation.

Evaluation and Revision of the Model and Guides

In accordance with Phase II evaluation input the Hawaiian Career Development Continuum Curriculum Guides were revised and printed. Preliminary evaluation data seems to substantiate the model on which the Guides are based.

This evaluator feels that the four Guides represent the most systematic, comprehensive approach to career development at this point in time. While the Guides have been made relevant to the state of Hawaii, they will provide assistance to other states and school districts interested in career development. The press for implementation will undoubtedly be one of Hawaii's top priorities.

Conclusions and Recommendations Related to Objective 1: In-Service Staff Training.

When the training results are interpreted in light of the process evaluation, it can be seen that the three workshops which were most effective in achieving training objectives, Kauai, Hilo, and Kona, were the three for which the process evaluation showed the highest ratings. Results show that the knowledge objective generally was achieved at a higher level than the skill objective. The process evaluation pointed up the time constraint. This factor may account, in part at least, for the lower level of achievement of the skill objective. Another process factor contributing to this was the fact that the supply of curriculum guides was not sufficient to permit each participant to have a set.

The relatively low rating for the Leeward workshop on the objective test, showing that only 32% of the participants met criterion level, is accounted for in part by the fact that 20% of the participants did not take the objective tests and a large number did not participate in the entire program. This points to a critical factor in any training program--selection of participants. In this in-service training program there were no criteria for selection of participants. In the Leeward workshop, one-third of the enrolled participants did not attend the total program. Windward, Honolulu, and Maui workshops also had participants who were not in attendance for the entire training program.

Another conclusion which can be drawn is that the learning environment is a critical factor in any training program. It can be noted that the three workshops which were most successful in achieving objectives, Kauai, Hilo, and Kona, were conducted in hotels where regular conference facilities and services were provided, according to requirements stipulated in the design for the delivery system.

The results of evaluating this training program suggest that with a systematic procedure for selecting participants, a training environment conducive to learning, and with participation in the total training program, the acquisition of basic knowledge about career development and development of preliminary skills for infusing career development into the curricula can be achieved with this training program.

The training package provided a model for an innovative, activity-oriented workshop. The success of this format was evident from the comments made by the participants. The format of "staying put and listening to lectures," as one participant stated, requires less in the way of planning and organization, but the learning is less than it would be when learning is activity-oriented.

It is important that the populations at the workshops be selected, and that administrators, counselors, and teachers receive in-service training. In order to have the greatest impact on the schools, it is necessary to select participants in the initial orientation and advanced training with great care. Effectiveness, enthusiasm, dedication, energy, and potential for leadership are important factors to consider when choosing participants. Training persons selected on the basis of these qualifications will make much more of an impact in the school system than training participants selected at random.

It is recommended that future training models incorporate a two-level training design and that participants for advanced training be chosen extremely carefully from among those who have completed the basic workshop and have shown leadership potential and mastery of career development concepts. Such two-level training will be more effective as well as more economical since the advanced participants should be fully capable, after training, to assume leadership positions in training others in their schools and districts. Involvement of more community representatives should also be considered. Training of administrators and counselors is essential.

Conclusions and Recommendations Related to Objective 2: Development of Instruments for Student Growth Assessment.

The four forms of the Student Growth Assessment of Career Development Inventory measured student growth in the career development areas of self-realization, economic efficiency, civic responsibility, and social relationships. Results from the pre- and posttests of control and experimental groups indicated there were no significant differences between experimental and control groups, nor were there significant differences between pre- and posttest responses. This, no doubt, is accounted for by the limited treatment time. These time constraints were due to the fact that all testing had to be completed by the end of the current fiscal year. Teachers had little time to incorporate career development learning experiences into their curriculum. However, trend data indicate that the instruments would measure differences between the two groups if the time interval was significantly longer.

It is recommended that data be gathered and analyzed routinely from the results of using the Student Growth Assessment of Career Development Inventory in subsequent years. Then data can form an important bank of information to help in interpreting results.

In classes with low reading ability, it is recommended that the inventory in the student growth assessment battery for the next lower level be used in testing career development outcomes. Since each guide has the same sequence of goals, subgoals, and objectives, the items in all four inventories are comparable in terms of testing achievement of objectives.

It is recommended that the inventories be used for instructional or guidance functions as well as for measurement instruments. Counselors can use the instruments for individual counseling purposes, and teachers can utilize them for stimulating discussions in the four career development goal areas.

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APPENDICES

APPENDIX A

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APPENDIX B

Sample Workshop Agenda

1974 DISTRICT WORKSHOPS

AGENDA

Afternoon Session

Chairperson:
Recorder:

3:30 - 4:15	Registration
4:15 - 4:20	Opening
4:20 - 4:30	Program Overview: Objectives and Procedures. T. A. Ryan
4:30 - 5:00	Film Presentation. Career Education
5:00 - 5:05	Task Group Assignment: Communication on Career Education Experiences. T. A. Ryan
5:05 - 5:30	Task Group Activity.
5:30 - 5:45	Task Group Reports Group IA Chairperson: Group IB Chairperson: Group IC Chairperson: Group ID Chairperson: Group IE Chairperson:
5:45 - 5:55	Discussion
5:55 - 6:00	Closing

P R O G R A M

for the

BANQUET SESSION

CAREER DEVELOPMENT CONTINUUM PROGRAM

1974 DISTRICT WORKSHOP

conducted by the

COLLEGE OF EDUCATION

of the

UNIVERSITY OF HAWAII

* * * * * * * * * * * * *

6:00 - 7:00	Banquet
7:00 - 7:10	Presiding. T. A. Ryan, Professor, College of Education University of Hawaii
7:10 - 7:20	Welcome. District Superintendent _____
7:20 - 7:25	Introduction of Speaker. T. A. Ryan
7:25 - 8:15	Address. Life Career Development: A New Investment Earl J. Moore, Professor of Education Department of Counseling and Personnel Services University of Missouri, Columbia

* * * * * * * * * * * * *

8:15 - 10:30	Career Development Instructional Guidance Materials Sharon Wago, Director, Career Information Center Office of the State Director of Vocational Education

1974 DISTRICT WORKSHOPS

AGENDA

Morning Session

Chairperson:
Recorder:

8:00 - 8:05	Opening
8:05 - 8:10	Feedback. T. A. Ryan
8:10 - 8:30	Career Development Continuum. T. A. Ryan
8:30 - 8:35	Task Group Assignment. Involvement Strategies. T.A. Ryan
8:35 - 8:55	Task Group Activity
8:55 - 9:10	Task Group Reports.
	Group IIA Chairperson:
	Group IIB Chairperson:
	Group IIC Chairperson:
	Group IID Chairperson:
	Group IIE Chairperson:
9:10 - 9:15	Discussion
9:15 - 10:00	Panel: Delivering Career Development in the Schools
	Panelist: Teacher
	Panelist: Counselor
	Panelist: Administrator
10:00 - 10:15	Recess
10:15 - 10:25	Task Group Assignment: Cooperation. T. A. Ryan
10:25 - 10:35	Task Group Activity
10:35 - 10:45	Task Group Reports
	Group IIIA Chairperson:
	Group IIIB Chairperson:
	Group IIIC Chairperson:
	Group IIID Chairperson:
10:45 - 10:55	Discussion
10:55 - 11:00	Task Group Assignment: Assumptions. T. A. Ryan
11:00 - 11:30	Task Group Activity
11:30 - 11:45	Task Group Reports.
	Group IVA Chairperson:
	Group IVB Chairperson:
	Group IVC Chairperson:
	Group IVD Chairperson:
11:45 - 11:50	Discussion
11:50 - 11:55	Feedback. T. A. Ryan
11:55 - 12:00	Closing

1974 DISTRICT WORKSHOPS

AGENDA

Afternoon Session:

Chairperson:
Recorder:

12:00 - 1:00	Luncheon Meeting. Discussion Session.
1:00 - 1:05	Opening
1:05 - 1:15	Task Group Assignment: Infusing Career Development into Subject Matter and Guidance. T. A. Ryan
1:15 - 3:00	Task Group Activity
3:00 - 3:15	Recess
3:15 - 3:45	Task Group Reports Group VA Chairperson: Group VB Chairperson: Group VC Chairperson: Group VD Chairperson: Group VE Chairperson:
3:45 - 4:00	Discussion
4:00 - 4:15	Assessment. T. A. Ryan
4:15 - 4:25	Recapitulation. T. A. Ryan
4:25 - 4:30	Closing

APPENDIX C

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY

ADMINISTRATOR'S MANUAL OF INSTRUCTIONS - FORM A

* * * * * * * *

Student Growth Assessment of Career Development Inventory (SGACDI) battery is composed of items designed to measure the extent to which four major goals of career development are being achieved. The goals are: Self-Realization, Economic Efficiency, Social Relationships, and Civic Responsibility. The SGACDI battery consists of four forms. Form A is designed to measure achievement of third grade students. Form B is designed to measure achievement of sixth grade students. Form C is designed to measure achievement of ninth grade students. Form D is designed to measure achievement of twelfth grade students.

This manual describes administration procedures for the SGACDI Form A, designed for administration to third grade students. It is important that these procedures be thoroughly understood and followed by anyone who is involved in administering the inventory.

Inventory Form A consists of 100 items which are to be answered by responding true or false. The inventory should be administered to a group of third grade students. It will take about one hour to administer the inventory. To avoid student boredom and fatigue, the inventory can be administered in 1 day, 2 days, 3 days, or 4 days.

PART 1

A. General Duties of the SGACDI Administrator

1. Supervising the administration of the SGACDI.

2. Selecting and instructing SGACDI inventory proctors, if any.

3. Providing optimal conditions for inventory administration by preventing distractions and interruptions.

4. Becoming thoroughly familiar with this manual, in particular, Part 2.

5. Recommending to the students in advance that they have two or more sharpened soft lead (No. 2) pencils with erasers.

B. Materials Required

1. A copy of this manual should be on hand and a large enough supply of the SGACDI booklets to provide one copy to each student and one to the administrator.

2. A supply of sharpened No. 2 lead pencils with erasers should be on hand for students who forget to bring pencils or break theirs.

3. Tables and desks should be available for all students. If chairs with arms are used, adequate provision must be made for left-handed students.

PART 2

A. General Directions for the Administration of the Inventory

1. Instructions enclosed in boxes are to be read aloud by the administrator. In order to provide a standardized administering situation, these directions should not be changed.

2. During the inventory, the administrator should walk around the room checking to see that students are following the procedure properly. The students should have nothing on their desks except the inventory booklets and pencils.

3. Care should be taken to explain to students that they are not being graded, but they should do their best.

4. The administrator should answer any questions that the students may raise.

5. The administrator should follow the "Specific Directions" (Part 2-B) in each testing session, in order to orient the students to the procedure for marking their responses.

6. If the testing is done in two or more sessions, collect the inventory booklets systematically for each row or table. This will facilitate redistribution of the booklets in the next session, provided the students occupy the same seats.

7. If testing is done in two or more sessions, the students will use the same inventory booklets in each session. Therefore, the administrator should make sure each student receives his or her own booklet in each testing session. The administrator should ask the students to check their names on the booklets to see that they have their own booklets.

B. Specific Directions for the Administration of the SGACDI

1. When all students have been seated, say:

> YOU ARE GOING TO RECEIVE A BOOKLET ON CAREER DEVELOPMENT. DO NOT OPEN THE BOOKLET UNTIL I TELL YOU TO DO SO.

2. Now distribute the booklets and say:

THE STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY IS EXACTLY WHAT THE TITLE SUGGESTS: AN INVENTORY OF YOUR GROWTH IN AREAS WHICH CONTRIBUTE TO CAREER DEVELOPMENT. THIS IS NOT A TEST. IT IS AN INVENTORY OF GROWTH IN FOUR AREAS WHICH RELATE TO CAREER DEVELOPMENT; SELF-REALIZATION, THAT IS, YOUR UNDERSTANDING OF YOURSELF; ECONOMIC EFFICIENCY, THAT IS, YOUR UNDERSTANDING OF WHAT IT TAKES TO BE AN EFFECTIVE PRODUCER OR CONSUMER OF GOODS AND SERVICES; SOCIAL RELATIONSHIP, THAT IS, YOUR ABILITY TO GET ALONG WITH OTHERS; AND CIVIC RESPONSIBILITY, THAT IS, YOUR UNDERSTANDING OF THE RIGHTS AND RESPONSIBILITIES OF YOURSELF AND OTHERS. THE RESULTS OF THIS INVENTORY CAN HELP YOU IN ASSESSING YOUR CAREER DEVELOPMENT. DO NOT TALK OVER THE QUESTIONS WITH ANYONE ELSE. UNLESS THE ANSWER IS WHAT YOU THINK, IT WILL NOT REALLY HELP TO GIVE A TRUE PICTURE OF YOUR CAREER DEVELOPMENT.

3. Write the date, teacher's name, and school on the board, and say:

WRITE YOUR FIRST AND LAST NAME ON THE TOP LINE. ON THE NEXT LINE GIVE YOUR GRADE, AGE, AND SEX. ON THE LINE BELOW THAT, WRITE YOUR TEACHER'S NAME. ON THE LOWEST LINE WRITE THE NAME OF OUR SCHOOL AND TODAY'S DATE. TODAY IS _____.

Provide assistance if necessary.

4. After completion of this, proceed by saying:

NOW LOOK AT THE SECTION WHERE IT SAYS "DIRECTIONS" AND LISTEN AS I READ THE DIRECTIONS TO YOU.

DIRECTIONS: LISTEN AS YOUR TEACHER READS EACH STATEMENT ALOUD. FOR EACH STATEMENT YOU SHOULD ANSWER EITHER TRUE OR FALSE. IF THE STATEMENT IF TRUE, CIRCLE THE WORD TRUE IN THE COLUMN TO THE RIGHT OF THE STATMENT. IF THE STATEMENT IS NOT TRUE, CIRCLE THE WORD FALSE. BE SURE TO LISTEN FOR THE STATEMENT NUMBER SO THAT YOU MARK THE CORRECT STATEMENT.

5. NOW LET US LOOK AT THE EXAMPLE ON THE BLACKBOARD.

Write on the board:

Today is Sunday. True False

IS TODAY SUNDAY? NO. TODAY IS NOT SUNDAY, SO WE SHOULD CIRCLE FALSE.

6. Explain that:

YOU SHOULD CIRCLE YOUR ANSWER IMMEDIATELY AFTER I READ EACH QUESTION TO YOU; IN THE SAME WAY WE DID THE EXAMPLE ON THE BOARD. O.K.?

7. Emphasize that:

> NO QUESTION SHOULD BE LEFT UNANSWERED. FOR EACH QUESTION ONLY ONE CIRCLE MUST BE MADE. IF A MISTAKE IS MADE, IT MUST BE ERASED COMPLETELY. MAKE SURE YOUR MARK IS HEAVY AND DARK.

8. Make sure everyone understands the answering procedures properly and is ready before you begin reading the questions.

9. Read each question twice. Read the question number. Then read the question. Then say:

> MARK YOUR ANSWER FOR QUESTION NUMBER _____.

10. Allow approximately 10 seconds for each question. Be sure the students answer all questions.

11. At the end of the session, after the last question is answered, say:

> NOW CLOSE YOUR BOOKLETS AND LEAVE THEM ON YOUR DESKS.

12. If testing is done in two or more sessions, at the end of the session, conclude by saying:

> THIS IS THE END OF THIS PART OF THE INVENTORY. WE WILL CONTINUE WITH THE NEXT PART IN THE NEXT SESSION. THE NEXT SESSION WILL BE _____.

Please provide the time of the next session.

C. Directions for Scoring

For scoring use the Scoring Key - Form A. The inventory is made up of 4 parts. Each part includes 25 items, and measures achievement of objectives implementing one of the four goals of career development. Part 1 includes items 1 to 25. Part 2 includes items 26 to 50. Part 3 includes items 51 to 75. Part 4 includes items 76 to 100. Give one point for each correct answer. Maximum possible score for each part will be 25 points, and for the whole inventory will be 100 points.

SCORING KEY

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM A

Item	Answer	Item	Answer	Item	Answer	Item	Answer
1	True	26	False	51	False	76	False
2	True	27	False	52	False	77	False
3	False	28	False	53	True	78	True
4	False	29	True	54	True	79	False
5	False	30	True	55	True	80	True
6	True	31	True	56	False	81	False
7	False	32	False	57	True	82	True
8	True	33	True	58	True	83	False
9	True	34	True	59	False	84	False
10	True	35	False	60	False	85	False
11	False	36	False	61	True	86	True
12	True	37	True	62	False	87	True
13	False	38	False	63	False	88	False
14	False	39	False	64	False	89	True
15	True	40	True	65	False	90	True
16	False	41	True	66	True	91	True
17	True	42	True	67	True	92	True
18	True	43	False	68	False	93	False
19	False	44	True	69	True	94	True
20	False	45	False	70	True	95	True
21	False	46	False	71	True	96	False
22	True	47	False	72	True	97	True
23	True	48	True	73	False	98	True
24	False	49	True	74	False	99	False
25	False	50	False	75	False	100	False

Part 3

INVENTORY INTERPRETATIONS

The SGACDI has been developed to assess student growth in four areas: self-realization, economic efficiency, social relationships, and civic responsibility. The inventory is designed to measure the extent to which the objectives of the Hawaii Career Development have been achieved; and to provide information and to assist counselors and teachers for designing new or improving existing programs to meet student needs. The inventory items have been constructed to measure achievement in relation to the 4 goals, 24 subgoals, and implementing learner objectives of the Hawaii Career Development Continuum. There are 6 subgoals to each goal as shown in Table 1.

TABLE 1

Major Goals and Subgoals

Goals	Subgoals
Self-Realization	1. Acquire skills of self-appraisal.
	2. Develop awareness and understanding of self.
	3. Develop understanding of decision-making process.
	4. Acquire skills of decision-making, risk taking, value clarification, and goal setting.
	5. Develop understanding of the relationship between work and life style.
	6. Develop appreciation for individual differences in interests, values, aptitude, skills, abilities, attitudes.
Economic Efficiency	1. Develop understanding of variety of occupations and knowledge of occupational classification and job descriptions.
	2. Develop understanding that occupations exist for a purpose and contribute to the dignity of the individual.
	3. Develop appreciation for the value of work, its contribution to society and the economy, and appreciate that work means different things to different people.
	4. Develop understanding that new occupations develop in response to needs of society.
	5. Develop employability skills.
	6. Develop understanding of the relationship between education and work.

Social Relationships	1. Develop interpersonal skills.
	2. Develop understanding of social roles.
	3. Develop understanding of cooperation.
	4. Develop understanding of community workers.
	5. Develop appreciation for flexibility and adaptability in social relationships.
	6. Develop understanding of interrelatedness of occupational roles.
Civic Responsibilities	1. Develop understanding of rights, privileges, and responsibilities on the job, in the home, in the community.
	2. Develop understanding of ways in which participation in civic groups contributes to individual and group goals.
	3. Develop understanding of importance of rules in society.
	4. Develop understanding of relationships between reponsibilities and rewards in work and leisure.
	5. Develop capabilities for making effective use of resources and understand relation of environment to work.
	6. Develop ability to participate invarious kinds of civic groups.

These are four items for each subgoal. These items relate to the learner objectives for that subgoal, as shown in Table 2. Items 1 to 24 test the achievement of the Self-Realization Subgoals. Items 26 to 49 test the achievement of the Economic Efficiency Subgoals. Items 51 to 74 test the achievement of the Social Relationships Subgoals. Items 76 to 99 test the achievement of the Civic Responsibility Subgoals. Items 25, 50, 75, and 100 are repeated items for reliability. A reliability check can be made by comparing responses to the following items: Items 25 and 11, 50 and 36, 75 and 60, 100 and 77. In Table 2, the dash signs imply there were not any objectives available for the corresponding items, but that the items were constructed according to the subgoal or the one single objective if available for that subgoal.

Table 2

Student Growth Assessment of Career Development Inventory - Form A

Distribution of the Items(I) According to Goals(G), Subgoals (SG) and Objectives(O)

I.	G. (SR)	SG.	O.	I.	G. (EE)	SG.	O.	I.	G. (SR*)	SG.	O.	I.	G. (CR)	SG.	O.
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	2	27	2	1	1	52	3	1	-	77	4	1	-
3	1	1	3	28	2	1	2	53	3	1	-	78	4	1	-
4	1	1	4	29	2	1	2	54	3	1	-	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	1	-	31	2	2	-	56	3	2	-	81	4	2	-
7	1	1	-	32	2	2	-	57	3	2	-	82	4	2	-
8	1	1	-	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	-	84	4	3	1
10	1	3	-	35	2	3	2	60	3	3	-	85	4	3	-
11	1	3	-	36	2	3	3	61	3	3	-	86	4	3	-
12	1	3	-	37	2	3	3	62	3	3	-	87	4	3	-
13	1	4	-	38	2	4	1	63	3	4	-	88	4	4	1
14	1	4	-	39	2	4	-	64	3	4	-	89	4	4	-
15	1	4	-	40	2	4	-	65	3	4	-	90	4	4	-
16	1	4	-	41	2	4	-	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	-
18	1	5	2	43	2	5	-	68	3	5	-	93	4	5	-
19	1	5	2	44	2	5	-	69	3	5	-	94	4	5	-
20	1	5	3	45	2	5	-	70	3	5	-	95	4	5	-
21	1	6	1	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	1	47	2	6	1	72	3	6	-	97	4	6	-
23	1	6	2	48	2	6	2	73	3	6	-	98	4	6	-
24	1	6	2	49	2	6	2	74	3	6	-	99	4	6	-
25	1	3	-	50	2	3	3	75	3	3	-	100	4	1	-

Note. SR = Self-Realization
EE = Economic Efficiency
SR* = Social Relationships
CR = Civic Responsibility

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM A

Student's Name _____

Grade _____ Age _____ Sex: Male Female

Teacher's Name _____

School _____ Date _____

The Student Growth Assessment of Career Development Inventory is exactly what the title suggests: an inventory of your growth in areas which contribute to career development. This is not a test. It is an inventory of growth in four areas which relate to career development: Self-Realization, that is, your understanding of yourself; Economic Efficiency, that is, your understanding of what it takes to be an effective producer or consumer of goods and services; Social Relationships, that is, your ability to get along with others; and Civic Responsibility, that is, your understanding of the rights and responsibilities of yourself and others. The results of this inventory can help you in assessing your career development. Do not spend a great deal of time on any one item. Do not talk over the questions with anyone else. Unless the answer is what you think, it will not really help to give a true picture of your career development.

DIRECTIONS: Listen as your teacher reads each statement aloud. For each statement you should answer either True or False. If the statement is true, circle the word True in the column to the right of the statement. If the statement is not true, circle the word False. Be sure to listen for the statement number so that you mark the correct statement.

Example: 1. Today is Sunday True False

Today is not Sunday, so circle the word False.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Do Not Write Below This Line

PART	ITEMS	GOAL MEASURED	POSSIBLE SCORE	ACTUAL SCORE
1	1-25	Self-Realization	25	
2	26-50	Economic Efficiency	25	
3	51-75	Social Relationships	25	
4	76-100	Civic Responsibility	25	
		Total	100	

Inventory Form A

Part 1

1.	I can think of 3 different words to describe myself.	True	False
2.	I know which school subject I do best.	True	False
3.	All boys and girls are the same when they are 11 years old.	True	False
4.	All third-grade boys and girls weigh the same.	True	False
5.	Very loud noises are pleasant to everybody.	True	False
6.	A person who wants to be a teacher should like working with children.	True	False
7.	To be an artist a person should be a good speller.	True	False
8.	A person who is not good in mathematics could be a successful librarian.	True	False
9.	A person decides what to wear by thinking about where one is going and what one will be doing.	True	False
10.	If you are given $5 to spend, you will first have to decide what is most important to you.	True	False
11.	Knowing what will happen to you if you do something makes it harder to decide.	True	False
12.	In order to decide whether to do something or not, a person has to know what will happen if it is done or not done.	True	False
13.	Boys and girls are taking more of a chance if they play a game they know how to play well than if they play a game for the first time.	True	False
14.	The same things are important to boys and girls in the 3rd grade as to their parents and teachers.	True	False
15.	Knowing what you want is the most important part of deciding something.	True	False
16.	Planning ahead is of no value.	True	False
17.	A person who likes a lot of free time for surfing would probably not like to be a doctor.	True	False
18.	People who like their jobs are usually good at their jobs.	True	False

19.	Students usually make their best grades in subjects they do not like.	True	False
20.	Being lazy helps a person make good grades.	True	False
21.	All third graders like the same T.V. programs.	True	False
22.	Some children play baseball better than others.	True	False
23.	People from different countries sometimes have different manners.	True	False
24.	Everyone likes rice.	True	False
25.	Knowing what will happen to you if you do something makes it harder to decide.	True	False

Inventory Form A (continued)

Part 2

26.	A person who bakes bread is called a chef.	True	False
27.	A person who paints houses is called a plumber.	True	False
28.	A person who fixes cars is making a product.	True	False
29.	A person who paints pictures is producing something.	True	False
30.	Being able to do something well makes a person think better of himself or herself.	True	False
31.	Most people take pride in doing their job well.	True	False
32.	When you paint a picture and someone says they like it, you would probably feel disappointed.	True	False
33.	Most boys and girls feel proud when they know they have done something to help at home.	True	False
34.	Everyone in the school benefits from the school janitors doing their jobs well.	True	False
35.	If Hawaii had no hotels, tourists would come here anyway.	True	False
36.	A person who has lots of money never works.	True	False
37.	Many people enjoy working because their work helps others.	True	False
38.	A city without any police, firemen, and firewomen would be a safe place in which to live.	True	False
39.	A family can get along on its own without the help of the rest of the community.	True	False
40.	If there were no farmers, people in the city could not live.	True	False
41.	New jobs are made when people have new needs.	True	False
42.	A job is done better if it is done step by step in an organized way.	True	False
43.	It does not matter if a worker is on time for the job.	True	False
44.	In order to get a job, one should have the skills needed for that job.	True	False

45.	Having good manners is not important for most jobs.	True	False
46.	A person can become an English teacher as soon as he or she finishes high school.	True	False
47.	A person needs to go to school more years to become a bus driver than to become a doctor.	True	False
48.	A person who plans to become an airline steward or stewardess should study foreign languages.	True	False
49.	To become a doctor a person must study science.	True	False
50.	A person who has lots of money never works.	True	False

Part 3

51.	A person who smiles and says "hello" is being unfriendly.	True	False
52.	An unhappy person will have more friends than a happy person.	True	False
53.	Everyone needs to learn to communicate with others.	True	False
54.	Being helpful around home makes life easier for everyone in the family.	True	False
55.	People feel worthwhile and important when their jobs are of service to others.	True	False
56.	Long distance telephone operators like their work because the phone calls are interesting to overhear.	True	False
57.	People feel worthwhile when they do their jobs well.	True	False
58.	Feeling proud of something you have done well is different from boasting.	True	False
59.	In doing a group activity, each person follows his or her own rules.	True	False
60.	Work done by a team is not as good as work done by one person.	True	False
61.	The waiter or waitress and the cook have to cooperate in order to serve people in a restaurant.	True	False
62.	People cooperate because they are too lazy to do things by themselves.	True	False
63.	The person who helps people find and check out books at the library is a bookkeeper.	True	False
64.	A mailman or woman is a person who gives people traffic tickets.	True	False
65.	A fireman or woman sells fire insurance.	True	False
66.	A bus driver helps people to get from one place to another.	True	False
67.	All jobs have some uninteresting parts to them.	True	False
68.	Boys and girls act the same on the playground as they do in the classroom.	True	False

69.	When the rules of a game are changed, players should play by the new rules.	True	False
70.	A third grader behaves differently from a ninth grader.	True	False
71.	In order to have grocers, we must have farm workers.	True	False
72.	It takes many different kinds of workers to put an astronaut on the moon.	True	False
73.	In order to build a house, one must hire a housekeeper.	True	False
74.	The job of a salesclerk is related to the job of a farmer.	True	False
75.	Work done by a team is not as good as work done by one person.	True	False

Part 4

76.	Being on time to meetings is not important.	True	False
77.	Teachers are responsible for seeing that students turn in their work on time.	True	False
78.	When United States citizens become 18 years old, they can vote to elect the President of the United States.	True	False
79.	Having jobs to do at home teaches children to be clean.	True	False
80.	When boys and girls join clubs like Cub Scouts and Brownies, they will probably make new friends.	True	False
81.	An organization that protects the welfare of workers is called a political party.	True	False
82.	When you take part in group games at school, you are contributing to group goals.	True	False
83.	When boys and girls collect money for UNICEF on Halloween, they are being greedy.	True	False
84.	A person can cross the street on a red light if no car is coming.	True	False
85.	The school has rules in order to teach students to obey.	True	False
86.	Waiting for your turn to speak makes it easier for a group to have a discussion.	True	False
87.	Laws are made to protect people.	True	False
88.	A person should be rewarded even if the person did the job badly.	True	False
89.	People feel proud of themselves when they do a job well.	True	False
90.	There are jobs from which people get great satisfaction even though the pay may be low.	True	False
91.	Doctors and nurses feel proud of their work because they are helping others.	True	False
92.	Everyone has a responsibility to keep from littering the school grounds.	True	False

93.	Keeping one's things neat makes it harder to find things.	True	False
94.	Most industries cause some pollution.	True	False
95.	Old newspapers and cans can be recycled.	True	False
96.	When you play a game, it is all right to take your turn before it is time to do so.	True	False
97.	Parents who take part in school activities benefit by learning more about their children.	True	False
98.	Adults who take part in neighborhood improvement groups increase their ability for getting along with others.	True	False
99.	Being a member of a group or on a committee makes a person feel more frightened and shy in front of a crowd.	True	False
100.	Teachers are responsible for seeing that students turn in their work on time.	True	False

APPENDIX E

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY

ADMINISTRATOR'S MANUAL OF INSTRUCTION - FORM B

* * * * * * * *

Student Growth Assessment of Career Development Inventory (SGACDI) battery is composed of items designed to measure the extent to which four major goals of career development are being achieved. The goals are: Self-Realization, Economic Efficiency, Social Relationships, and Civic Responsibility. The SGACDI battery consists of four forms. Form A is designed to measure achievement of third grade students. Form B is designed to measure achievement of sixth grade students. Form C is is designed to measure achievement of ninth grade students. Form D is designed to measure achievement of twelfth grade students.

This manual describes administration procedures for the SGACDI Form B, designed for administration to sixth grade students. It is important that these procedures be thoroughly understood and followed by anyone who is involved in administering the inventory.

Inventory Form B consists of 100 multiple choice items which will require about one hour to complete. To avoid student boredom and fatigue, the inventory may be administered in two or four sessions. Students can be asked to complete one or two parts for each session. Two possible schedules are as follow:

Schedule 1		Schedule 2	
Session 1	Part 1	Session 1	Parts 1 & 2
Session 2	Part 2	Session 2	Parts 3 & 4
Session 3	Part 3		
Session 4	Part 4		

Part 1

A. General Duties of the SGACDI Administrator

1. Supervising the administration of the SGACDI.

2. Selecting and instructing SGACDI proctors, if any.

3. Supplying inventory booklets, pencils, erasers, desks, chairs.

4. Preventing distractions and iterruptions, thus providing optimal conditions for the inventory administration.

5. Becoming thoroughly familiar with the SGACDI manual, <u>in particular</u>, Part 2-B.

B. Materials Required

1. A copy of this manual should be on hand, and a large enough supply of the inventory booklets to provide one copy for each student and one for the administrator.

2. An adequate supply of sharpened No. 2 lead pencils with erasers should be on hand for students who forget to bring pencils or in cases where their pencils break.

3. Tables and desks should be available for all students. If chairs with arms are used, adequate provision must be made for left-handed students.

Part 2

A. General Directions for the Administration of the Inventory

1. Instructions enclosed in boxes are to be read aloud by the administrator. In order to provide a standardized administering situation, these directions should not be changed.

2. Care should be taken to explain to students that they are <u>not</u> being graded, but they should do their best.

3. During the inventory completion, the administrator should walk around the room checking to see that the students are following the procedure correctly. The students should have nothing on their desks except the inventory booklets and pencils.

4. In response to questions about whether students should guess, say:

> TRY TO ANSWER EVERY QUESTION. IF YOU ARE UNCERTAIN ABOUT AN ANSWER, SELECT THE ONE ALTERNATIVE YOU FEEL IS MOST NEARLY CORRECT.

5. Questions raised concerning the specific content of the item should not be answered by the administrator, except to clarify or define the meaning of words the students do not understand.

6. If testing is done in two or more sessions, the administrator should follow the "Specific Directions" (Part 2-B) in each testing session in order to reorient the students to the answering procedure.

7. If the inventory is being administered in two or more sessions, collect the inventory booklets systematically for each row or table, to facilitate redistribution in the next session, provided the students occupy the same seats.

8. If the inventory is being administered in two or more sessions, the administrator should make sure that each student receives his or her own inventory. The administrator should ask the students to check their names on the booklets to see that they have their own booklets.

B. Specific Directions for the Administration of the Inventory

1. When all the students have been seated, say:

> YOU ARE GOING TO RECEIVE A BOOKLET ON CAREER DEVELOPMENT. DO NOT OPEN THE BOOKLET UNTIL I TELL YOU TO DO SO.

2. Now distribute the booklets and say:

> THE STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY IS EXACTLY WHAT THE TITLE SUGGESTS: AN INVENTORY OF YOUR GROWTH IN AREAS WHICH CONTRIBUTE TO CAREER DEVELOPMENT. THIS IS NOT A TEST. IT IS AN INVENTORY OF GROWTH IN FOUR AREAS WHICH RELATE TO CAREER DEVELOPMENT: SELF-REALIZATION, THAT IS, YOUR UNDERSTANDING OF YOURSELF; ECONOMIC EFFICIENCY, THAT IS, YOUR UNDERSTANDING OF WHAT IT TAKES TO BE AN EFFECTIVE PRODUCER OR CONSUMER OF GOODS AND SERVICES; SOCIAL RELATIONSHIPS, THAT IS, YOUR ABILITY TO GET ALONG WITH OTHERS; AND CIVIC RESPONSIBILITY, THAT IS, YOUR UNDERSTANDING OF THE RIGHTS AND RESPONSIBILITIES OF YOURSELF AND OTHERS. THE RESULTS OF THIS INVENTORY CAN HELP YOU IN ASSESSING YOUR CAREER DEVELOPMENT. DO NOT SPEND A GREAT DEAL OF TIME ON ANY ONE ITEM. DO NOT TALK OVER THE QUESTIONS WITH ANYONE ELSE. UNLESS THE ANSWER IS WHAT YOU THINK, IT WILL NOT REALLY HELP TO GIVE A TRUE PICTURE OF YOUR CAREER DEVELOPMENT.

3. Write the date, teacher's name, and school on the board, and say:

> WRITE YOUR FIRST AND LAST NAME ON THE TOP LINE. ON THE NEXT LINE GIVE YOUR GRADE, AGE, AND SEX. THEN ON THE NEXT TWO LINES IN THE SPACES PROVIDED, WRITE YOUR TEACHER'S NAME, OUR SCHOOL, AND TODAY'S DATE. TODAY IS _____.

Provide assistance if necessary.

4. After each student has completed this part, proceed by saying:

> NOW LOOK AT THE SECTION WHERE IT SAYS "DIRECTIONS", AND READ IT SILENTLY AS I READ THE DIRECTIONS ALOUD. DIRECTIONS: FOR EACH ITEM IN THIS INVENTORY SELECT THE WORD OR PHRASE THAT BEST COMPLETES THE STATEMENT, AND WRITE THE LETTER OF YOUR CHOICE, (A), (B), (C), OR (D), ON THE LINE IN FRONT OF THE ITEM NUMBER.

NOW LOOK AT THE EXAMPLE GIVEN.

__C__ 1. THE NUMBER OF MONTHS IN ONE YEAR IS

(A) SEVEN
(B) TEN
(C) TWELVE
(D) TWENTY

THE BEST CHOICE IS TWELVE, SO THE LETTER C IS WRITTEN ON THE LINE IN FRONT OF THE STATEMENT.

ARE THERE ANY QUESTIONS? (PAUSE)

5. Emphasize that:

NO QUESTIONS SHOULD BE LEFT UNANSWERED. FOR EACH QUESTION ONLY ONE ANSWER MUST BE CHOSEN. IF A MISTAKE IS MADE, IT MUST BE ERASED COMPLETELY. WRITE YOUR ANSWER HEAVY AND CLEAR.

Make sure that everybody understands the answering procedure.

6. Then say:

TODAY YOU ARE GOING TO ANSWER ITEMS NUMBER ___ TO NUMBER ___. AFTER YOU HAVE FINISHED ANSWERING ALL THE QUESTIONS, CLOSE YOUR BOOKLETS AND LEAVE THEM ON YOUR DESKS.

The administrator should provide the numbers in the box above from the segment of the inventory which is going to be completed in that session.

7. Then say:

YOU MAY NOW BEGIN WORK ON THE INVENTORY STARTING WITH ITEM NUMBER ___.

Please provide the number.

8. If testing is done in two or more sessions, at the end of the session conclude by saying:

THIS IS THE END OF THIS PART OF THE INVENTORY. WE WILL CONTINUE WITH THE NEXT PART IN THE NEXT SESSION. THE TIME FOR THE NEXT SESSION IS _____.

Please provide the time of the next session.

C. Directions for Scoring

For scoring use the Scoring Key - Form B. The inventory is made up of 4 parts. Each part includes 25 items, and measures achievement of objectives implementing one of the four goals of career development. Part 1 includes items 1 to 25. Part 2 includes items 26 to 50. Part 3 includes items 51 to 75. Part 4 includes items 76 to 100. Give one point for each correct answer. Maximum possible score for each part will be 25, and for the whole inventory will be 100 points.

SCORING KEY

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM B

Item	Answer	Item	Answer	Item	Answer	Item	Answer
1	b	26	c	51	a	76	a
2	c	27	b	52	d	77	b
3	d	28	a	53	c	78	d
4	a	29	a	54	a	79	c
5	c	30	b	55	b	80	b
6	b	31	d	56	d	81	c
7	a	32	c	57	d	82	d
8	d	33	b	58	c	83	c
9	d	34	c	59	a	84	d
10	a	35	d	60	a	85	c
11	b	36	a	61	b	86	a
12	b	37	c	62	d	87	c
13	c	38	a	63	c	88	a
14	a	39	d	64	a	89	d
15	c	40	b	65	a	90	a
16	d	41	d	66	b	91	b
17	b	42	b	67	c	92	d
18	d	43	c	68	b	93	c
19	a	44	a	69	a	94	a
20	c	45	a	70	d	95	b
21	c	46	c	71	b	96	c
22	b	47	d	72	d	97	b
23	d	48	b	73	b	98	d
24	a	49	b	74	d	99	a
25	d	50	c	75	a	100	b

Part 3

Inventory Interpretations

The SGACDI has been developed to assess student growth in four areas: self-realization, economic efficiency, social relationships, and civic responsibility. The inventory is designed to measure the extent to which objectives of the Hawaii Career Development Continuum have been achieved; and to provide information and to assist counselors and teachers in designing new or improving existing programs to meet student needs. The inventory items have been constructed to measure achievement in relation to the 4 goals and 24 subgoals and implementing learner objectives of the Hawaii Career Development Continuum. There are 6 subgoals to each goal, as shown in Table 1.

Table 1

Major Goals and Subgoals

Goals	Subgoals
Self-Realization	1. Acquire skills of self-appraisal.
	2. Develop awareness and understanding of self.
	3. Develop understanding of decision-making process.
	4. Acquire skills of decision-making, risk taking, value clarification, and goal setting.
	5. Develop understanding of the relationship between work and life style.
	6. Develop appreciation for individual differences in interests, values, aptitude, skills, abilities, attitudes.
Economic Efficiency	1. Develop understanding of variety of occupations, interrelationship of occupations, and knowledge of occupational classifications and job descriptions.
	2. Develop understanding that occupations exist for a purpose and contribute to the dignity of the individual.
	3. Develop appreciation for the value of work, its contribution to society and the economy, and appreciate that work means different things to different people.
	4. Develop understanding that new occupations develop in response to needs of society.
	5. Develop employability skills.
	6. Develop understanding of the relationship between education and work.
Social Relationships	1. Develop interpersonal skills.
	2. Develop understanding of social roles.
	3. Develop understanding of cooperation.

	4.	Develop understanding of community workers.
	5.	Develop appreciation for flexibility and adaptability in social relationships.
	6.	Develop understanding of interrelatedness of occupational roles.
Civic Responsibility	1.	Develop understanding of rights, privileges, and responsibilities on the job, in the home, in the community.
	2.	Develop understanding of ways in which participation in civic groups contributes to individual and group goals.
	3.	Develop understanding of importance of rules in society.
	4.	Develop understanding of relationships between responsibilities and rewards in work and leisure.
	5.	Develop capabilities for making effective use of resources and understand relation of environment to work.
	6.	Develop ability to participate in various kinds of civic groups.

There are four items for each subgoal. These items relate to the learner objectives for the subgoal, as shown in Table 2. Items 1 to 24 test the achievement of the Self-Realization Subgoals. Items 26 to 49 test the achievement of the Economic Efficiency Subgoals. Items 51 to 74 test the Social Relationships Subgoals. Items 76 to 99 test the achievement of Civic Responsibility Subgoals. Items 25, 50, 75, and 100 are repeated items for checking reliability. A reliability check can be made by comparing responses to the following items: Items 25 and 4, 50 and 39, 75 and 51, 100 and 79. The dash signs in Table 2 imply that there were no objectives for the corresponding items, but that the items were constructed according to the subgoal or the one single objective if available for that subgoal.

Table 2

Student Growth Assessment of Career Development Inventory - Form B

Distribution of the Items(I) According to Goals(G), Subgoals (SG) and Objectives(O)

I.	G. (SR)	SG.	O.	I.	G. (EE)	SG.	O.	I.	G. (SR*)	SG.	O.	I.	G. (CR)	SG.	O.
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	2	27	2	1	1	52	3	1	-	77	4	1	-
3	1	1	2	28	2	1	2	53	3	1	-	78	4	1	-
4	1	1	2	29	2	1	2	54	3	1	-	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	2	2	31	2	2	-	56	3	2	-	81	4	2	-
7	1	2	3	32	2	2	-	57	3	2	-	82	4	2	-
8	1	2	3	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	1	84	4	3	1
10	1	3	-	35	2	3	2	60	3	3	-	85	4	3	-
11	1	3	-	36	2	3	3	61	3	3	-	86	4	3	-
12	1	3	-	37	2	3	3	62	3	3	-	87	4	3	-
13	1	4	1	38	2	4	1	63	3	4	1	88	4	4	1
14	1	4	2	39	2	4	1	64	3	4	-	89	4	4	-
15	1	4	2	40	2	4	2	65	3	4	-	90	4	4	-
16	1	4	3	41	2	4	2	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	1
18	1	5	1	43	2	5	-	68	3	5	-	93	4	5	-
19	1	5	2	44	2	5	-	69	3	5	-	94	4	5	-
20	1	5	3	45	2	5	-	70	3	5	-	95	4	5	-
21	1	6	-	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	-	47	2	6	1	72	3	6	-	97	4	6	-
23	1	6	-	48	2	6	2	73	3	6	-	98	4	6	-
24	1	6	-	49	2	6	2	74	3	6	-	99	4	6	-
25	1	1	2	50	2	4	1	75	3	1	1	100	4	1	-

Note. SR = Self-Realization SR* = Social Relationships
EE = Economic Efficiency CR = Civic Responsibility

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM B

Student's Name_____

Grade_____Age _____Sex: Male Female

Teacher's Name_____

School_____Date_____

The Student Growth Assessment of Career Development Inventory is exactly what the title suggests: an inventory of your growth in areas which contribute to career development. This is not a test. It is an inventory of growth in four areas which relate to career development: Self-Realization, that is, your understanding of yourself; Economic Efficiency, that is, your understanding of what it takes to be an effective producer or consumer of goods and services; Social Relationships, that is, your ability to get along with others; and Civic Responsibility, that is, your understanding of the rights and responsibilities of yourself and others. The results of this inventory can help you in assessing your career development. Do not spend a great deal of time on any one item. Do not talk over the questions with anyone else. Unless the answer is what you think, it will not really help to give a true picture of your career development.

DIRECTIONS: For each item in this inventory select the word or phrase that best completes the statement, and write the letter of your choice--(a), (b), (c), or (d)--on the line in front of the item number.

Example: __c__ 1. The number of months in one year is
(a) seven
(b) ten
(c) twelve
(d) twenty

The best choice is twelve, so the letter c is written on the line in front of the statement.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

Do Not Write Below This Line

PART	ITEMS	GOAL MEASURED	POSSIBLE SCORE	ACTUAL SCORE
1	1-25	Self-Realization	25	
2	26-50	Economic Efficiency	25	
3	51-75	Social Relationships	25	
4	76-100	Civic Responsibility	25	
			Total 100	

INVENTORY FORM B

Part 1

b 1. You can best tell if you are doing well in a subject by
(a) checking the time the subject is given
(b) looking at your report card
(c) asking your next door neighbor
(d) asking a friend

c 2. One of the physical characteristics that a person might have is
(a) laziness
(b) coolness
(c) handsomeness
(d) cheerfulness

d 3. A social characteristic of a person is being
(a) pretty
(b) short
(c) strong
(d) friendly

a 4. An aptitude that a person might have is
(a) mechanical
(b) fat
(c) charming
(d) selfish

c 5. The best way to find out if one is good at an activity is by
(a) thinking about it
(b) reading about it
(c) trying it
(d) asking a friend

b 6. A person can become better at an activity by
(a) talking about it
(b) practicing it
(c) reading about it
(d) worrying about it

a 7. Knowing that you do something well is important because it helps you to
(a) make use of it
(b) boast about it to others
(c) hide it from others
(d) forget about it altogether

d 8. One good reason for knowing that a student is weak in a certain subject is that it gives the person a chance
(a) to forget about that subject
(b) to get someone else to do the assignments
(c) to avoid that teacher in the future
(d) to try and overcome the weakness if it is possible

d 9. When deciding to do something, a person should think about
(a) why and how to do it but not when
(b) how and when to do it but not why
(c) why and when to do it but not how
(d) why, how, and when to do it

a 10. When deciding to do something, it is important to know
(a) both the advantages and disadvantages of doing it
(b) the advantages of doing it
(c) the disadvantages of doing it
(d) neither the advantages nor disadvantages of doing it

b 11. The first thing a person should do in making a career decision is
(a) ask teachers and parents what to do
(b) set life career goals
(c) check working conditions
(d) find out how long the work week is

b 12. In order to do almost any job well, one will need to
(a) know lots of people
(b) be able to make decisions
(c) be good in sports
(d) know one's own interests

c 13. Once a person decides to do something, the next step to take would be to
(a) give it more thought
(b) wait for a while until things get cleared up
(c) go ahead and do it
(d) forget about it

a 14. In choosing an occupation, it is important to know about
(a) the jobs which you like and dislike
(b) only the jobs you dislike
(c) only the jobs you like
(d) any jobs, regardless of your likes or dislikes

c 15. You can <u>best</u> tell how interested you are in a job by
(a) asking a person you work with
(b) asking a close friend
(c) knowing how much you enjoy it
(d) checking the time you spend working

d 16. In deciding whether or not a particular job is of interest to you, it is most important to consider
(a) your aptitudes and values
(b) your abilities and skills
(c) your skills and values
(d) your likes and dislikes

b 17. A worker who is likely to have a great deal of leisure time is a
(a) doctor
(b) sanitation worker
(c) governor
(d) hotel manager

d 18. A person who would probably do a great deal of traveling to many parts of the country or the world would be
(a) a forklift operator
(b) a T.V. repairman
(c) a chemist
(d) an airline pilot

a 19. You will usually do better in a subject at school if you are
(a) ambitious and dependable
(b) cheerful and dependable
(c) honest and friendly
(d) friendly and cheerful

c 20. One is most likely to do well in a subject if one
(a) goes to school on time
(b) does the assignment only when one feels like it
(c) studies regularly
(d) keeps one's books neat and clean

c 21. In a group of sixth grade boys, the main difference among them would be in their
(a) ages
(b) sex
(c) interests
(d) hair style

b 22. The pupils and teachers of sixth grade classes in Hawaii will most likely
(a) have the same values and attitudes
(b) have different values and attitudes
(c) have different attitudes but the same values
(d) have the same attitudes but different values

d 23. In any sixth grade class it is most likely that
(a) all the students will excel in the same activity
(b) some of the students will excel in all activities
(c) none of the students will excel in any activity
(d) the students will excel in different activities

a 24. The best way to tell how two persons are different from each other is to observe the way they
(a) feel, behave, and look
(b) behave and look
(c) feel and look
(d) feel and behave

__d__ 25. A word which describes a person's aptitude is
(a) fat
(b) charming
(c) selfish
(d) mechanical

Part 2

c 26. A person who puts gas in a car and checks the tires, battery, water, and oil is
(a) an automobile mechanic
(b) an autobody repairman
(c) a service station attendant
(d) a safety inspector

b 27. A person who prepares food, wears an apron and a tall white hat, and plans the meal is called
(a) a waiter
(b) a chef
(c) a dietician
(d) a pantry worker

a 28. A worker who cooperates with other workers to produce or make something is called
(a) a production worker
(b) a labor leader
(c) a coordinator
(d) a service worker

a 29. A salesperson works mainly with
(a) people
(b) things
(c) ideas
(d) data

b 30. People have respect for policemen and policewomen because
(a) people are afraid of them
(b) they enforce the law
(c) they can give traffic tickets
(d) they can arrest people

d 31. An important official who works for the city government is
(a) the governor
(b) the United States' president
(c) a congressman
(d) the mayor

c 32. A person who works to give service to others will most likely feel
(a) useless
(b) indifferent
(c) worthwhile
(d) respectful

b 33. A farmer's job is of most help to
(a) a banker
(b) a baker
(c) a barber
(d) a bartender

c 34. A teacher contributes to society by
(a) making a living
(b) using resources
(c) helping others
(d) creating new jobs

d 35. If we had no medical doctors and hospitals in Hawaii,
(a) tourists would increase but economic goods would decrease
(b) economic goods would increase, but tourists would decrease
(c) economic goods and tourists would not change
(d) economic goods and tourists would both decrease

a 36. When you participate in a group task at school, you will be able to contribute to the group goal by
(a) sharing part of the work with others
(b) sitting around and watching how others work
(c) being independent and doing things your own way
(d) refusing to help others unless they are friends

c 37. You can <u>best</u> contribute to group goals when in a group activity by
(a) setting up your own rules
(b) being cooperative only when and if you desire
(c) following the rules set by the group
(d) asking others to follow your way

a 38. You can find out which occupations have been developed within your lifetime by writing to
(a) the Department of Labor and the Chamber of Commerce
(b) the Department of Labor and the Honolulu Police Department
(c) the Department of Labor and the Visitors Bureau
(d) the Chamber of Commerce and the Honolulu Police Department

d 39. The best way to find out what occupations have been developed during your lifetime is to
(a) read children's books
(b) ask a close friend
(c) view comic strips
(d) refer to an occupational handbook

b 40. The best way to find out <u>why</u> a new occupation was created is by
(a) knowing how many people work in that occupation
(b) knowing what the occupation provides for people
(c) knowing who works in that occupation
(d) knowing whether the occupation is a daytime or nighttime job

d 41. A policeman's job was created because society needs
(a) to take away people's property by force
(b) to take rich people's property and give it to poor people
(c) to give people traffic tickets and create money for the police department
(d) to protect people and their property

b 42. To be successful in most jobs a worker should
(a) have a union card
(b) be skillful
(c) be friendly
(d) go to bed early

c 43. To be successful in most jobs a worker should be
(a) friendly
(b) deliberate
(c) organized
(d) humorous

a 44. To be successful in most jobs a worker should be
(a) responsible
(b) kind
(c) musical
(d) handsome

a 45. To be successful in most jobs a worker should be
(a) cooperative
(b) considerate
(c) robust
(d) artistic

c 46. A person must go to college to be
(a) an airline pilot
(b) a sanitation worker
(c) a professor
(d) a chef

d 47. A nurse must take courses in
(a) mathematics
(b) English
(c) bookkeeping
(d) science

b 48. An engineer must study
(a) biology and chemistry
(b) physics and mathematics
(c) history and geography
(d) economics and banking

b 49. In order to become a doctor one must complete
(a) college, vocational school, and an apprenticeship
(b) college, medical school, and an internship
(c) vocational school, medical school, and an internship
(d) community college and medical school

c 50. The best way to find out what occupations have been developed during your lifetime is by
(a) viewing comic strips
(b) reading children's books
(c) referring to an occupational handbook
(d) asking a close friend

Part 3

a 51. When you play a group game you know you can play well, you will likely feel very
(a) confident
(b) fearful
(c) tense
(d) weak

d 52. If you play in a group game and you win, you will probably feel
(a) selfish
(b) indifferent
(c) aggressive
(d) proud

c 53. Doing your share of work well in a group activity will make the group
(a) respect you less
(b) load you with extra work
(c) respect you more
(d) neglect you more

a 54. When several people participate in a group activity
(a) all of the participants should enjoy it
(b) only some of the participants need enjoy it
(c) only the leader should enjoy it
(d) none of the participants should enjoy it

b 55. I work in a courthouse. When people have arguments they cannot settle, they hire lawyers and present their arguments in front of me in court. I wear a robe and use a gavel. It is usually my job to decide which side is right. Who am I?
(a) mayor
(b) judge
(c) recorder
(d) senator

d 56. My job is important to everyone. I collect the garbage that people discard and put into cans and bags. If I did not do my job the garbage would collect on the streets and this would not be healthy. Who am I?
(a) fireman or firewoman
(b) policeman or policewoman
(c) meter reader
(d) sanitation worker

d 57. I work for the city. I am elected to be in charge of the city government. When things need to get done people call my office or attend our city council meetings. Who am I?
(a) governor
(b) police chief
(c) inspector
(d) mayor

c 58. One of my parents is a Republican and the other is a Democrat. They belong to what?
(a) service club
(b) trade unions
(c) political parties
(d) parent-teacher associations

a 59. Preventive medicine is best provided when
(a) doctors and nurses work together
(b) doctors and dentists work together
(c) doctors work alone
(d) dentists and nurses work together

a 60. The customers in an eating place are given the best service when
(a) counter workers and the fry cook work together
(b) fry cooks work alone
(c) counter workers work alone
(d) counter workers and customers work together

b 61. In order to manufacture an automobile it is important to have cooperation between
(a) customers and salespersons
(b) supervisors and assembly workers
(c) salespersons and assembly workers
(d) supervisors and customers

d 62. To provide a good education for Hawaii students it is especially important that
(a) the school clerk and bookkeeper work together
(b) the cafeteria workers and parents work together
(c) the maintenance workers and cafeteria workers work together
(d) the principals, teachers and parents work together

c 63. A baker's job depends on
(a) a broker's job
(b) a butcher's job
(c) a farmer's job
(d) a banker's job

a 64. The plastic industry is dependent upon the
(a) petroleum industry
(b) steel industry
(c) car industry
(d) cotton industry

a 65. A clothing salesperson's job depends upon the
(a) textile industry
(b) automobile industry
(c) food industry
(d) sugar industry.

b 66. The druggist's work depends on the work done by
(a) a teacher
(b) a doctor
(c) a storeclerk
(d) a policeman or policewoman

c 67. Some people work because they want to
(a) kill time
(b) get tired
(c) make money
(d) relax

b 68. Most people work because they want to
(a) get old faster
(b) feel useful
(c) waste their time
(d) sleep well at night

a 69. Many people work because they want to
(a) make a living for themselves and their dependents
(b) take advantage of others
(c) use natural resources wisely
(d) punish themselves

d 70. When parents are helping out at school by making things for school parties, they are
(a) relaxing
(b) teaching
(c) studying
(d) working

b 71. A doctor's job is related to
(a) an engineer's job
(b) a druggist's job
(c) a banker's job
(d) a professor's job

d 72. An engineer's job is related to
(a) a carpenter's job
(b) a chemist's job
(c) a teacher's job
(d) an architect's job

b 73. A grocer's job is related to
(a) a baker's job
(b) a farmer's job
(c) a butcher's job
(d) a barber's job

d 74. An actor's job is related to
(a) a realtor's job
(b) an architect's job
(c) a sculptor's job
(d) an actress's job

__a__ 75. When you play a group game you know you can play well, you will likely feel very
(a) confident
(b) tense
(c) fearful
(d) weak

Part 4

a 76. When you agree to do a share of work in a group activity, you have accepted
(a) a responsibility
(b) a privilege
(c) a right
(d) a hardship

b 77. If you fail to do your share of work, your friends will probably think of you as being
(a) careless
(b) undependable
(c) forgetful
(d) carefree

d 78. When you take a job, you are expected to
(a) do it whenever you are in the right mood
(b) ask somebody else to do it for you
(c) be carefree about doing it
(d) do it as best you can

c 79. Workers will most likely be successful in their jobs if they are
(a) punctual, dependable, and artistic
(b) dependable, organized, and indulgent
(c) punctual, dependable, and organized
(d) punctual, organized, and evasive

b 80. Taking part in an organized group activity most likely means
(a) learning new things and making money
(b) learning new things and making new friends
(c) making new friends and more money
(d) sharing things and giving up working

c 81. Taking part in an organized group probably means
(a) giving up group goals
(b) sacrificing group goals for personal goals
(c) achieving personal goals by contributing to group goals
(d) giving up personal goals

d 82. Taking part in an organized group probably means working
(a) independently
(b) competitively
(c) incompetently
(d) interdependently

c 83. To take part in an organized group, one needs to be
(a) aggressive and agreeable
(b) aggressive and dependable
(c) agreeable and dependable
(d) agreeable and impersonal

d 84. In an election people do their voting at the
(a) senate chambers
(b) tax office
(c) T.V. station
(d) polls

c 85. We need to have laws in order to
(a) make jobs
(b) enforce rules
(c) protect society
(d) help lawmakers

a 86. In Hawaii state taxes are used to pay for
(a) schools
(b) industries
(c) newspapers
(d) hotels

c 87. When voting for a President, you would be <u>least</u> concerned about the person's
(a) leadership quality
(b) understanding of people's needs
(c) friendliness
(d) ability to solve problems

a 88. Some students help with chores at home without getting paid because they like to
(a) be praised
(b) get money
(c) spend time
(d) follow orders

d 89. Schools sometimes give prizes to students who
(a) do chores at home
(b) sit quietly in the classroom
(c) are very playful and friendly
(d) are excellent in their studies

a 90. An employer might reward a worker for doing a job well by giving the worker
(a) a promotion
(b) a club membership card
(c) a demotion
(d) a discharge note

b 91. A professor of chemistry might be rewarded by being
(a) awarded a badge for literary achievement
(b) awarded a medal for scientific distinction
(c) asked to retire early
(d) asked to write an autobiography

d 92. Pineapple workers live and work in
(a) warm, dry climates
(b) cold, wet climates
(c) cold, dry climates
(d) warm, wet climates

c 93. To have good crops it is most important for farmers to have water and
(a) barren soil
(b) good workers
(c) rich soil
(d) heavy trucks

a 94. Hawaii is a popular place for tourists because
(a) Hawaii has a beautiful climate
(b) Hawaii is the fiftieth state
(c) people in Hawaii are dependent on tourists
(d) Hawaii has so many different people

b 95. In order to keep tourists coming to Hawaii, we must keep Hawaii's beaches
(a) open only to tourists
(b) beautiful and clean
(c) under the control of hotels
(d) closed to surfers

c 96. When people join civic groups they will
(a) avoid working altogether
(b) avoid being interdependent
(c) become aware of their rights as citizens
(d) forget about their problems

b 97. By joining a civic group you can most likely learn how to be
(a) playful
(b) useful
(c) restless
(d) restful

d 98. When you join a civic group you will
(a) cooperate, compete and coordinate with others
(b) cooperate, compete, and organize with others
(c) coordinate, compete, and organize with others
(d) coordinate, cooperate, and organize with others

a 99. An organization that protects the welfare of the workers is called
(a) a labor union
(b) a political party
(c) a service club
(d) a professional society

__b__ 100. One may increase one's success in a job by being
(a) dependable, organized, and indulgent
(b) punctual, dependable, and organized
(c) organized, evasive, and punctual
(d) punctual, dependable, and artistic

APPENDIX G

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY

ADMINISTRATOR'S MANUAL OF INSTRUCTIONS - FORM C

* * * * * * * *

Student Growth Assessment of Career Development Inventory (SGACDI) battery is composed of items designed to measure the extent to which four major goals of career development are being achieved. The goals are: Self-Realization, Economic Efficiency, Social Relationships, and Civic Responsibility. The SGACDI battery consists of four forms. Form A is designed to measure achievement of third grade students. Form B is designed to measure achievement of sixth grade students. Form C is designed to measure achievement of ninth grade students. Form D is designed to measure achievement of twelfth grade students.

This manual describes administration procedures for the SGACDI Form C designed for administration to ninth grade students. It is important that these procedures be thoroughly understood and followed by anyone who is involved in administering the inventory.

Inventory Form C consists of 100 multiple choice items which will require about one hour to complete. To avoid student boredom and fatigue, the inventory may be administered in two or four sessions. Students can be asked to complete one or two parts for each session. Two possible schedules are as follow:

Schedule 1		Schedule 2	
Session 1	Part 1	Session 1	Parts 1 & 2
Session 2	Part 2	Session 2	Parts 3 & 4
Session 3	Part 3		
Session 4	Part 4		

PART 1

A. General Duties of the SGACDI Administrator

1. Supervising the administration of the SGACDI.

2. Selecting and instructing SGACDI proctors, if any.

3. Providing necessary materials such as pencils, erasers, inventory booklets.

4. Preventing distractions and interruptions, thus providing optimal conditions for the inventory administration.

5. Becoming thoroughly familiar with this manual, <u>in particular</u>, Part 2-B.

B. Materials Required

1. A copy of this manual should be on hand, and a large enough supply of the SCACDI booklets to provide one to each student and one to the administrator.

2. An adequate supply of sharpened No. 2 lead pencils with erasers should be on hand for students who forgot to bring pencils or in cases when their pencils break.

3. Tables and desks should be available for all students. If chairs with arms are used, adequate provision must be made for left-handed students.

PART 2

A. General Directions for the Administration of the Inventory

1. Instructions enclosed in boxes are to be read aloud by the administrator. In order to provide a standardized administering situation, these directions should not be changed.

2. Care should be taken to explain to students that they are <u>not</u> being graded, but they should do their best.

3. During the inventory completion, the administrator should walk around the room checking to see that students are following the procedures properly. The students should have nothing on their desks except the inventory booklets and pencils.

4. In response to questions about whether students should guess, say:

> TRY TO ANSWER EVERY QUESTION. IF YOU ARE UNCERTAIN ABOUT AN ANSWER, SELECT THE ONE ALTERNATIVE YOU FEEL IS MOST NEARLY CORRECT.

5. Questions raised concerning the specific content of the item should not be answered by the administrator, except to clarify or define the meaning of words the students do not understand.

6. If testing is done in two or more sessions, the administrator should follow the "Specific Directions" (Part 2-B) in each testing session in order to reorient the students to the answering procedure.

7. If the testing is done in two or more sessions, the administrator should collect the inventory booklets systematically for each row or table, to facilitate redistribution in the next session, provided the students occupy the same seats.

8. If testing is done in two or more sessions, the students will use the same inventory booklets in each session. Therefore, the administrator should make sure each student receives his or her own booklet in each testing session. The administrator should ask the students to check their names on the booklets to see that they have their own booklets.

B. Specific Directions for the Administration of the Inventory

1. When all students have seated, say:

> YOU ARE GOING TO RECEIVE A BOOKLET ON CAREER DEVELOPMENT. DO NOT OPEN THE BOOKLET UNTIL I TELL YOU TO DO SO.

2. Now distribute the booklets and say:

> THE STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY IS EXACTLY WHAT THE TITLE SUGGESTS: AN INVENTORY OF YOUR GROWTH IN AREAS WHICH CONTRIBUTE TO CAREER DEVELOPMENT. THIS IS NOT A TEST. IT IS AN INVENTORY OF GROWTH IN FOUR AREAS WHICH RELATE TO CAREER DEVELOPMENT: SELF-REALIZATION, THAT IS, YOUR UNDERSTANDING OF YOURSELF; ECONOMIC EFFICIENCY, THAT IS, YOUR UNDERSTANDING OF WHAT IT TAKES TO BE AN EFFECTIVE PRODUCER OR CONSUMER OF GOODS AND SERVICES; SOCIAL RELATIONSHIPS, THAT IS, YOUR ABILITY TO GET ALONG WITH OTHERS; AND CIVIC RESPONSIBILITY, THAT IS, YOUR UNDERSTANDING OF THE RIGHTS AND RESPONSIBILITIES OF YOURSELF AND OTHERS. THE RESULTS OF THIS INVENTORY CAN HELP YOU IN ASSESSING YOUR CAREER DEVELOPMENT. DO NOT SPEND A GREAT DEAL OF TIME ON ANY ONE ITEM. DO NOT TALK OVER THE QUESTIONS WITH ANYONE ELSE. UNLESS THE ANSWER IS WHAT YOU THINK, IT WILL NOT REALLY HELP TO GIVE A TRUE PICTURE OF YOUR CAREER DEVELOPMENT.

3. Write the date, teacher's name, and school on the board, and say:

> WRITE YOUR FIRST AND LAST NAME ON THE TOP LINE. ON THE NEXT LINE GIVE YOUR GRADE, AGE, AND SEX. THEN ON THE NEXT TWO LINES IN THE SPACES PROVIDED WRITE YOUR TEACHER'S NAME, OUR SCHOOL, AND TODAY'S DATE. TODAY IS _____.

Provide assistance if necessary.

4. After each student has completed this part, proceed by saying:

> NOW LOOK AT THE SECTION WHERE IT SAYS "DIRECTIONS" AND READ IT SILENTLY AS I READ THE DIRECTIONS ALOUD. DIRECTIONS: FOR EACH ITEM IN THIS INVENTORY SELECT THE WORD OR PHRASE THAT BEST COMPLETES THE STATEMENT, AND WRITE THE LETTER OF YOUR CHOICE, (A), (B), (C), OR (D), ON THE LINE IN FRONT OF THE ITEM NUMBER.

NOW LOOK AT THE EXAMPLE GIVEN.

__C__ 1. THE NUMBER OF MONTHS IN ONE YEAR IS

(A) SEVEN
(B) TEN
(C) TWELVE
(D) TWENTY

THE BEST CHOICE IS TWELVE, SO THE LETTER C IS WRITTEN ON THE LINE IN FRONT OF THE STATEMENT. ARE THERE ANY QUESTIONS? (PAUSE)

5. Emphasize that:

NO QUESTIONS SHOULD BE LEFT UNANSWERED. FOR EACH QUESTION, ONLY ONE ANSWER MUST BE CHOSEN. IF A MISTAKE IS MADE, IT MUST BE ERASED COMPLETELY. WRITE YOUR ANSWER HEAVY AND CLEAR.

Make sure that everybody has understood the answering procedure.

6. Then say:

TODAY YOU ARE GOING TO ANSWER ITEMS NUMBER ___ TO NUMBER ___. AFTER YOU HAVE ANSWERED ALL THE QUESTIONS CLOSE YOUR BOOKLETS AND LEAVE THEM ON YOUR DESKS.

The administrator should provide the numbers in the box above from the segment of the inventory which is going to be completed in that session.

7. Then say:

YOU MAY NOW BEGIN WORK ON THE INVENTORY STARTING WITH ITEM NUMBER _____.

Please provide the item number.

8. If the testing is done in two or more sessions, at the end of a session conclude by saying:

THIS IS THE END OF THIS PART OF THE INVENTORY. WE WILL CONTINUE WITH THE NEXT PART IN THE NEXT SESSION. THE TIME FOR THE NEXT SESSION IS _____.

Please provide the time of next session.

C. Directions for Scoring

For scoring use Scoring Key - Form C. The inventory is made up of 4 parts. Each part includes 25 items, and measures achievement of objectives implementing one of the four goals of career development. Part 1 includes items 1 to 25. Part 2 includes items 26 to 50. Part 3 includes items 56 to 75. Part 4 includes items 76 to 100. Give one point for each correct

answer. Maximum possible score for each part will be 25 points, and for the whole inventory it will be 100 points.

SCORING KEY

CAREER DEVELOPMENT CONTINUUM INVENTORY - FORM C

Item	Answer	Item	Answer	Item	Answer	Item	Answer
1	b	26	c	51	a	76	d
2	b	27	b	52	d	77	c
3	d	28	a	53	c	78	a
4	a	29	c	54	b	79	c
5	b	30	d	55	d	80	a
6	d	31	c	56	c	81	b
7	b	32	c	57	a	82	b
8	c	33	b	58	a	83	c
9	d	34	a	59	b	84	d
10	c	35	a	60	c	85	c
11	d	36	d	61	a	86	a
12	a	37	c	62	a	87	d
13	c	38	a	63	d	88	a
14	a	39	d	64	a	89	d
15	b	40	b	65	c	90	b
16	b	41	d	66	b	91	c
17	c	42	b	67	d	92	c
18	d	43	a	68	b	93	d
19	b	44	d	69	d	94	a
20	c	45	d	70	a	95	b
21	c	46	b	71	a	96	a
22	b	47	b	72	d	97	d
23	b	48	c	73	c	98	c
24	a	49	a	74	b	99	a
25	c	50	b	75	d	100	d

PART 3

INVENTORY INTERPRETATIONS

The SGACDI has been develped to assess student growth in four areas: self-realization, economic efficiency, social relationships, and civic responsibility. The inventory is designed to measure the extent to which objectives of the Hawaii Career Development Continuum have been achieved; and to provide information to assist counselors and teachers in designing new or improving existing programs to meet student needs. The inventory items have been constructed to measure achievement in relation to the 4 goals, 24 subgoals and implementing learner objectives of the Hawaii Career Development Continuum. There are six subgoals to each goal, as shown in Table 1.

Table 1

Major Goals and Subgoals

Goals	Subgoals
Self-Realization	1. Acquire skills of self-appraisal.
	2. Develop awareness and understanding of self.
	3. Develop understanding of decision-making process.
	4. Acquire skills of decision-making, risk taking, value clarification, and goal setting.
	5. Develop understanding of the relationship between work and life style.
	6. Develop appreciation for individual differences in interests, values, aptitude, skills, abilities, attitudes.
Economic Efficiency	1. Develop understanding of variety of occupations, and knowledge of occupational classifications and job descriptions.
	2. Develop understanding that occupations exist for a purpose and contribute to the dignity of the individual.
	3. Develop appreciation for the value of work, its contribution to society and the economy, and appreciate that work means different things to different people.
	4. Develop understanding that new occupations develop in response to needs of society.
	5. Develop employability skills.
	6. Develop understanding of the relationship between education and work.
Social Relationships	1. Develop interpersonal skills.
	2. Develop understanding of social roles.
	3. Develop understanding of cooperation.
	4. Develop understanding of community workers.

	5.	Develop appreciation for flexibility and adaptability in social relationships.
	6.	Develop understanding of interrelatedness of occupational roles.
Civic Responsibility	1.	Develop understanding of rights, privileges, and responsibilities on the job, in the home, in the community.
	2.	Develop understanding of ways in which participation in civic groups contributes to individual and group goals.
	3.	Develop understanding of importance of rules in society.
	4.	Develop understanding of relationships between responsibilities and rewards in work and leisure.
	5.	Develop capabilities for making effective use of resources and understand relation of environment to work.
	6.	Develop ability to participate in various kinds of civic groups.

There are four items for each subgoal. These items relate to the learner objectives for the subgoal, as shown in Table 2. Items 1 to 24 test the achievement of the Self-Realization Subgoals. Items 26 to 49 test the achievement of the Economic Efficiency Subgoals. Items 51 to 74 test the achievement of the Social Relationships Subgoals. Items 76 to 99 test the achievement of the Civic Responsibility Subgoals. Items 25, 50, 75, and 100 are repeated items for checking reliability. A reliability check can be made by comparing responses to the following items: Items 25 and 6, 50 and 30, 75 and 59, 100 and 85. In Table 2 note that the dash signs imply that there were not any objectives for the corresponding items, but that the items were constructed according to the subgoal or the one single objective if available for that subgoal.

Table 2

Career Development Continuum Inventory - Form C

Distribution of Items(I) According to Goals(G) Subgoals(SG) and Objectives(O)

I.	G. (SR)	SG.	O.	I.	G. (EE)	SG.	O.	I.	G. (SR*)	SG.	O.	I.	G. (CR)	SG.	O.
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	2	27	2	1	-	52	3	1	-	77	4	1	-
3	1	1	2	28	2	1	-	53	3	1	-	78	4	1	-
4	1	1	2	29	2	1	-	54	3	1	-	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	2	1	31	2	2	-	56	3	2	-	81	4	2	-
7	1	2	2	32	2	2	-	57	3	2	-	82	4	2	-
8	1	2	2	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	1	84	4	3	1
10	1	3	1	35	2	3	1	60	3	3	1	85	4	3	-
11	1	3	2	36	2	3	2	61	3	3	2	86	4	3	-
12	1	3	2	37	2	3	2	62	3	3	2	87	4	3	-
13	1	4	1	38	2	4	1	63	3	4	1	88	4	4	1
14	1	4	1	39	2	4	1	64	3	4	-	89	4	4	-
15	1	4	2	40	2	4	2	65	3	4	-	90	4	4	-
16	1	4	2	41	2	4	2	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	1
18	1	5	1	43	2	5	-	68	3	5	1	93	4	5	-
19	1	5	2	44	2	5	-	69	3	5	2	94	4	5	-
20	1	5	3	45	2	5	-	70	3	5	2	95	4	5	-
21	1	6	1	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	2	47	2	6	-	72	3	6	-	97	4	6	-
23	1	6	3	48	2	6	-	73	3	6	-	98	4	6	-
24	1	6	3	49	2	6	-	74	3	6	-	99	4	6	-
25	1	2	1	50	2	2	1	75	3	3	1	100	4	3	-

Note. SR = Self-Realization SR* = Social Relationships
EE = Economic Efficiency CR = Civic Responsibility

APPENDIX H

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM C

Student's Name_____

Grade_____ Age_____ Sex: Male Female

Teacher's Name_____

School_____ Date_____

The Student Growth Assessment of Career Development Inventory is exactly what the title suggests: an inventory of your growth in areas which contribute to career development. This is not a test. It is an inventory of growth in four areas which relate to career development: Self-Realization, that is, your understanding of yourself; Economic Efficiency, that is, your understanding of what it takes to be an effective producer or consumer of goods and services; Social Relationships, that is, your ability to get along with others; and Civic Responsibility, that is, your understanding of the rights and responsibilities of yourself and others. The results of this inventory can help you in assessing your career development. Do not spend a great deal of time on any one item. Do not talk over the questions with anyone else. Unless the answer is what you think, it will not really help to give a true picture of your career development.

DIRECTIONS: For each item in this inventory select the word or phrase that best completes the statement, and write the letter of your choice--(a), (b), (c), or (d)--on the line in front of the item number.

Example: c 1. The number of months in one year is
(a) seven
(b) ten
(c) twelve
(d) twenty

The best choice is twelve, so the letter c is written on the line in front of the statement.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

Do Not Write Below This Line

PART	ITEMS	GOAL MEASURED	POSSIBLE SCORE	ACTUAL SCORE
1	1-25	Self-Realization	25	
2	26-50	Economic Efficiency	25	
3	51-75	Social Relationships	25	
4	76-100	Civic Responsibility	25	
			Total 100	

INVENTORY FORM C

Part 1

b 1. A worker who needs to be especially fast and physically fit is
(a) a carpenter
(b) a policeman/woman
(c) a bus driver
(d) a house cleaner

b 2. A worker who does an extraordinary amount of physical work is
(a) a salesperson
(b) a sanitation worker
(c) a bus driver
(d) a tour director

d 3. A worker whose job demands a very great amount of accuracy is
(a) an economic analyst
(b) an account clerk
(c) a technical writer
(d) a medical surgeon

a 4. In choosing an occupation, people should be aware of their own
(a) abilities, interests, and attitudes
(b) abilities, interests, and place of birth
(c) attitudes, interests, and cultural background
(d) attitudes, interests, and racial background

b 5. If you engage in an occupation that you dislike, you will more likely be
(a) successful if you read fast
(b) successful if you grow to like the work
(c) unsuccessful no matter what
(d) successful if you make friends easily

d 6. Your disinterest in a job may be changed to interest after you
(a) tell your feelings to a friend
(b) leave it aside for a while
(c) take a vacation abroad
(d) learn more about it

b 7. The best reason for being aware of your own strengths is so that you can
(a) hide them from others
(b) use them to choose the right occupation
(c) use them to take advantage of others
(d) forget about your weaknesses

c 8. It is important for you to be aware of your own weaknesses because you can then
(a) make sure nobody finds out about them
(b) forget about the weaknesses completely
(c) try to find out how to overcome the weaknesses
(d) try to find other people with the same weaknesses

d 9. The more you know about a situation
(a) the more confusing the situation becomes
(b) the more critical the time element becomes
(c) the better off your opponents will be
(d) the better prepared you will be to make decisions

c 10. People who are able to make good decisions tend to be more
(a) impulsive
(b) impatient
(c) successful
(d) educated

d 11. In making career decisions a person must think first of all in terms of
(a) parents' interests
(b) friends' interests
(c) public interests
(d) personal interests

a 12. When a person decides on a career, the most important factor would probably be
(a) personal satisfaction
(b) social status
(c) family tradition
(d) making money

c 13. If you plan to be a teacher, your high school course of study will most likely be
(a) general education
(b) vocational training
(c) college preparatory
(d) technical training

a 14. An undesirable occupation for a shy person would be
(a) insurance salesperson
(b) brickmason
(c) carpenter
(d) farmer

b 15. A person who places high value on achievement and recognition from others would be most likely to choose a career as
(a) a gardener
(b) a musician
(c) a taxi driver
(d) a sanitation worker

b 16. If several career opportunities are open to a person, one would have to consider
(a) job location, income, and one's own friends
(b) income, job location, and one's own values
(c) transportation, hours, and one's own friends
(d) transportation, food preference, and one's own values

c 17. One's occupation will likely determine one's
(a) age and income
(b) religion and race
(c) income and friends
(d) race and friends

d 18. The people in a particular occupational group most likely will have the same
(a) age
(b) sex
(c) friends
(d) living style

b 19. One who has a liking for figures and calculation would do well as
(a) a typist
(b) a bookkeeper
(c) a machinist
(d) a librarian

c 20. People who were workers in the Peace Corps probably found that their way of life
(a) did not change
(b) was changed educationally
(c) was changed economically and socially
(d) was changed politically

c 21. When people of different ethnic backgrounds work and live together they tend
(a) to develop different interests
(b) to dislike each other more
(c) to develop similar values
(d) to be suspicious of each other

b 22. When you work or live with people from different cultural or racial backgrounds, you should
(a) try to change your ways to their ways
(b) understand and respect their ways
(c) avoid associating with such people
(d) try to change their ways to your ways

b 23. The factor which is <u>least</u> helpful to describe how two groups of people are different is
(a) religion
(b) total population
(c) race
(d) customs

a 24. We can <u>best</u> describe how two groups of people differ in their way of life by observing their
(a) behaviors
(b) heights
(c) weights
(d) sizes

__c__ 25. Your disinterest in an occupation may be changed to interest after you

(a) leave it aside for a while
(b) take a vacation abroad
(c) learn more about it
(d) tell your feelings to a friend

Inventory Form C (continued)

Part 2

c 26. A salesperson is one who works with
(a) things
(b) data
(c) people
(d) ideas

b 27. A statistician is a person who works with
(a) things
(b) data
(c) people
(d) ideas

a 28. A mechanic works with
(a) things
(b) data
(c) people
(d) ideas

c 29. A community worker whose job is concerned mainly with people is a
(a) meter reader
(b) sanitation worker
(c) policeman/woman
(d) telephone repairperson

d 30. The worker whose job is most directly important to the welfare of people is the
(a) salesperson
(b) florist
(c) ditch digger
(d) social worker

c 31. Ambulance drivers probably increase their feelings of personal dignity because
(a) the hours of work are flexible
(b) the rate of pay is very high
(c) their work involves great responsibility
(d) their work involves some travel

c 32. Nurses probably develop feelings of worth because
(a) their hours change from time to time
(b) the fringe benefits are extraordinary
(c) they are helping other people
(d) they meet important people

b 33. People have respect for policemen and policewomen because
(a) people are afraid of them
(b) they enforce the law
(c) they can give traffic tickets
(d) they can arrest people

a 34. A service worker whose work is often done in resort hotels is a
(a) cook
(b) fireman/woman
(c) policeman/woman
(d) pharmacist

a 35. A worker who contributes to our environment by keeping it healthy and clean is
(a) a sanitation worker
(b) a medical doctor
(c) a social worker
(d) a licensed nurse

d 36. A person to whom money means a great deal might decide to be a
(a) travel agent
(b) teacher
(c) farmer
(d) lawyer

c 37. If no one in Honolulu had jobs,
(a) everybody would be free and happy
(b) there would be no conflicts or crimes
(c) there would be many people who were frustrated
(d) there would be no worry about the future

a 38. There are many different jobs in the society because
(a) there exist so many different needs
(b) people like to try different jobs
(c) the population is so large in this country
(d) there are so many different people in this country

d 39. New occupations are created in the society because
(a) young people do not like to do old jobs
(b) some people always like to try new jobs
(c) people get tired of doing old jobs over and over again
(d) new needs arise in the society

b 40. Our community would become totally unsafe without the services of our
(a) mailman/woman
(b) policeman/woman
(c) zookeepers
(d) social workers

d 41. Our Hawaiian communities would be hardest hit economically if we did not have the contribution of
(a) doctors and nurses
(b) architects and engineers
(c) policemen/women and firemen/women
(d) hotel and restaurant workers

b 42. When an employer has many applications for a particular job, the applicant who is picked most likely will be the one having
(a) the most references
(b) the best job qualifications
(c) the greatest economic need
(d) the greatest mental ability

a 43. Those workers who are usually hardest hit by unemployment are
(a) the unskilled workers
(b) the semi-skilled workers
(c) the craftsmen
(d) the professional workers

d 44. Your chances of being hired for a job will increase if you have
(a) motor skills and manners
(b) good manners and attitudes
(c) good manners and skills
(d) good attitudes and skills

d 45. Once you are hired for a job your chances of keeping the job will increase if you are
(a) neat, punctual, forgetful
(b) organized, dependent, carefree
(c) organized, carefree, impersonal
(d) efficient, organized, neat

b 46. To be able to work as an electrician a person should have
(a) a high school diploma with courses in mechanical drawing
(b) one or two years of post-secondary vocational technical education
(c) four or five years of college education
(d) an engineering degree

b 47. To be able to work as an engineer one should have
(a) a high school diploma with courses in industrial arts
(b) four or five years of college with courses in mathematics and physics
(c) one or two years of community college or vocational-technical school
(d) a high school diploma with courses in mechanical drawing

c 48. A person who studies uses and compositions of medicines is called
(a) a chemist
(b) a biochemist
(c) a pharmacist
(d) a nutritionist

a 49. To become a newspaper reporter, one should study
(a) journalism
(b) physics
(c) English
(d) chemistry

b 50. The worker whose job is most directly important to the welfare of the people is the
(a) ditch digger
(b) social worker
(c) florist
(d) salesperson

Part 3

a 51. One who makes friends quickly and easily is most likely to be
(a) compatible
(b) aggressive
(c) impulsive
(d) seclusive

d 52. The best thing to do if you cannot get what you want from other people is to
(a) take it from them by force
(b) steal it if you can
(c) beg for it or cry
(d) remain calm and patient

c 53. A very effective way to gain an understanding of oneself is through
(a) plenty of exercise each morning
(b) a well balanced diet
(c) interacting with various people
(d) keeping to oneself and avoiding people

b 54. If a person criticizes you or your work, you should
(a) demand an immediate apology
(b) see how to best benefit from the criticism
(c) respond with counter criticism
(d) stop interacting with that person

d 55. The way a person behaves depends largely on
(a) the time of year
(b) the place you are in
(c) the interests you have
(d) the groups you are in

c 56. A person has an expected way to behave if the person
(a) goes surfing alone
(b) does homework
(c) joins the basketball team
(d) watches TV

a 57. You can best influence a group by
(a) participating in its activities
(b) reading about the group
(c) thinking a great deal about it
(d) hearing what others say about it

a 58. Being a member of a group, like Boy Scouts or Girl Scouts, helps a person to
(a) appreciate different ethnic groups
(b) develop independence in thinking
(c) develop skills in athletics
(d) acquire skills in self-understanding

b 59. In a group activity participants should work
(a) independently
(b) cooperatively
(c) competitively
(d) impersonally

c 60. When participating in a group activity, the members should
(a) follow their own rules
(b) help others if they feel like it
(c) cooperate with others to do the task
(d) avoid being dependent on others

a 61. The effect of teamwork is that work is done more
(a) effectively
(b) inefficiently
(c) slowly
(d) competitively

a 62. People often cooperate to do things because
(a) they find it essential to their survival
(b) they are afraid of competing with each other
(c) they are too lazy to do things alone
(d) they like to check and control each other

d 63. To make the pineapple industry profitable, it is necessary for the jobs of cannery workers and pineapple pickers to be
(a) independent
(b) controlled
(c) competitive
(d) interrelated

a 64. A doctor's occupation is most closely related to that of
(a) a nurse
(b) a chemist
(c) a biochemist
(d) a physicist

c 65. A civil engineer's job is most closely related to
(a) a carpenter's job
(b) a sanitation engineer's job
(c) an architect's job
(d) a pilot's job

b 66. A newspaper editor's job is most closely related to
(a) a sociologist's job
(b) a journalist's job
(c) a realtor's job
(d) a biologist's job

d 67. People who can change their behavior from one situation to another are
(a) inconsistent
(b) maladjusted
(c) irresponsive
(d) flexible

b 68. A person who is able to play different roles when on a group project would most likely
(a) constantly interfere in everybody's work
(b) facilitate the completion of the project
(c) delay the completion of the project
(d) push everybody else aside and do the project alone

d 69. The best reason for changing from one occupation to a new or a different occupation is that a person
(a) is mentally unstable
(b) is not able to stick to a single job for long
(c) does not know what he or she really wants
(d) sees the change as essential to survival and success

a 70. Over a long period of time the relationship between any two people will most likely
(a) change somewhat
(b) remain the same
(c) become stronger
(d) become weaker

a 71. A baker's job would not continue to exist if there were no
(a) farmers
(b) teachers
(c) coal miners
(d) doctors

d 72. Your daily life at school is probably influenced most by
(a) teachers and custodians
(b) teachers and principal
(c) friends and principal
(d) teachers and friends

c 73. In order to build a house, one will likely need the services of
(a) a machinist, an electrician, and a carpenter
(b) an assembler, an architect, and an electrician
(c) a carpenter, a painter, and a plumber
(d) a plumber, a glazier, and an assembler

b 74. To meet the basic needs of the tourist industry, Hawaii needs
(a) hotel managers, tour directors, and movie projectionists
(b) food service workers, hotel workers, and bus drivers
(c) stenographers, typists, and immigration officials
(d) barbers, beauticians, and salesclerks

d 75. When people participate in a group task they tend to work
(a) impersonally
(b) competitively
(c) independently
(d) interdependently

Part 4

d 76. Sharing part of the work in a group project means you should
(a) be unconcerned if the task is completed
(b) be unconcerned if the rest complete their parts of the task
(c) strictly stick to your own rules and standards
(d) be concerned with the efficiency of task completion

c 77. If you accept a share of work in a group task but fail to do it as you promisted to, the other members would think of you as being
(a) careless
(b) forgetful
(c) irresponsible
(d) carefree

a 78. An employee working for a company should follow the company rules
(a) even if they may seem unfair
(b) only as long as they are fair
(c) only if the worker is paid enough
(d) only if they are approved

c 79. The safety rules in a construction company are for
(a) keeping the tools and machines undamaged
(b) operating the company efficiently
(c) the safety of the workers themselves
(d) the safety of the building itself

a 80. Participating as a volunteer in a civic group would mean
(a) contributing to a cause
(b) avoiding working
(c) killing extra time
(d) earning extra money

b 81. Participating in a civic group like the League of Women Voters will increase a person's chances for
(a) discussing personal problems and family matters
(b) becoming more aware of one's rights as a citizen
(c) creating an independent group in the community
(d) contributing to the blood bank in the community

b 82. A person who joins a civic organization should be able
(a) to compete with others in the group
(b) to take initiative when necessary
(c) to be domineering and agressive
(d) to be submissive and non-challenging

c 83. People usually join civic organizations to
(a) gain self-understanding
(b) participate in social activities
(c) fight against social injustice
(d) make new friends

d 84. Labor unions were established in order
(a) to create new leadership roles among workers
(b) to have control over workers and check if they work properly
(c) to have workers get together sometimes to exchange their working knowledge
(d) to protect the rights and privileges of the workers

c 85. The reason for establishing laws in the society is
(a) to provide jobs for the lawyers
(b) to provide jobs for the police
(c) to provide protection of society
(d) to make money for the city

a 86. Rules and regulations which restrict areas where hiking is permitted
(a) should be obeyed under all circumstances
(b) should be obeyed only if rangers are around
(c) should not be obeyed if no fines are imposed
(d) should be obeyed under special circumstances

d 87. Laws and rules that are established in a society
(a) should never be changed
(b) should be changed if lawyers say so
(c) should be changed once in a while so that politicians can keep their jobs
(d) should be changed if most of the people say so

a 88. Working should give a person a feeling of being
(a) useful
(b) playful
(c) wasteful
(d) useless

d 89. Working should give a person a sense of
(a) belonging, incompetence, and achievement
(b) belonging, dependency, and unimportance
(c) achievement, impersonality, and importance
(d) belonging, achievement, and worth

b 90. Working should provide an opportunity for a person to satisfy his or her need for
(a) status, approval, and impersonality
(b) status, approval, and giving service
(c) approval, giving service, and aggression
(d) aggression, approval, and dependency

__c__ 91. A person who works will likely develop a strong appreciation for
(a) wastefulness
(b) dependency
(c) leisure time
(d) snobbishness

__c__ 92. The purpose of recycling cans and newspapers is
(a) to create new jobs for the unemployed
(b) to increase companies' profits
(c) to conserve resources
(d) to overcome temporary shortages of such products

__d__ 93. A social worker's job deals with conservation of
(a) natural resources
(b) energy
(c) endangered species
(d) human resources

__a__ 94. Keeping the environment clean is the responsibility of
(a) every person in the country
(b) sanitation workers
(c) all those who use motor vehicles
(d) all residents who live in cities

__b__ 95. Keeping the environment clean most likely will result in
(a) decreased use of resources
(b) less disease and death
(c) greater social costs
(d) greater personal loss

__a__ 96. Workers should be punctual for their work
(a) if they want to increase their chances for advancement
(b) only if they find the job is interesting
(c) if they will be fined for being late
(d) if they notice other workers are punctual

__d__ 97. Dependability in a job means that
(a) certain workers can be depended upon to complete everyone else's work
(b) one can depend on others to complete one's assigned work
(c) the worker is a helpless and dependent person
(d) the worker will complete the assigned work on time

__c__ 98. An employer of airplane mechanics usually wants to have employees who have
(a) intelligence, mental ability, good work habits
(b) psychomotor skills, manipulative skills
(c) good work habits, mental and motor skills
(d) mental abilities, motor skills, intelligence

__a__ 99. Personal traits that are important factors in working in groups are
(a) punctuality and dependability
(b) strength and aggressiveness
(c) sensitivity and stubbornness
(d) verbal skills and energy

__d__ 100. Laws are established in the society in order
(a) to make money for the city
(b) to create jobs for the lawyers
(c) to create jobs for the police
(d) to provide protection of society

APPENDIX I

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY

ADMINISTRATOR'S MANUAL OF INSTRUCTION - FORM D

* * * * * * * *

Student Growth Assessment of Career Development Inventory (SGACDI) battery is composed of items designed to measure the extent to which four major goals of career development are being achieved. The goals are: Self-Realization, Economic Efficiency, Social Relationships, and Civic Responsibility. The SGACDI battery consists of four forms. Form A is designed to measure achievement of third grade students. Form B is designed to measure achievement of sixth grade students. Form C is designed to measure achievement of ninth grade students. Form D is designed to measure achievement of twelfth grade students.

This manual describes administration procedures for the SGACDI Form D. It is important that these procedures be understood and followed by anyone who is involved in administering the inventory.

Inventory Form D consists of 100 multiple choice items which will require about one hour to complete. There are four parts, each part consisting of 25 items related to the four goals of career development. To avoid student boredom and fatigue, the inventory may be administered in two or four sessions. Students can be asked to complete one or two parts for each session. Two possible schedules are:

Schedule 1		Schedule 2	
Session 1	Part 1	Session 1	Parts 1 & 2
Session 2	Part 2	Session 2	Parts 3 & 4
Session 3	Part 3		
Session 4	Part 4		

Part 1

A. General Duties of the SGACDI Administrator

1. Supervising the administration of the SGACDI.

2. Selecting and instructing SGACDI proctors if any.

3. Providing necessary materials such as pencils, erasers, inventory bookelets.

4. Preventing distractions and interruptions, thus providing optimal conditions for the inventory adminitration.

5. Becoming thoroughly familiar with this manual, <u>in particular</u> Part 2-B.

B. Materials Required

1. A copy of the manual should be on hand as well as a large enough supply of the SGACDI booklets to provide one for each student and one to the administrator.

2. An adequate supply of sharpened No. 2 lead pencils with erasers should be on hand for students who forget to bring pencils or in cases when their pencils break.

3. Tables and desks should be available for all students. If chairs with arms are used, adequate provision must be made for left-handed students.

Part 2

A. General Directions for the Administration of the Inventory

1. Instructions enclosed in boxes are to be read aloud by the administrator. In order to provide a standardized administering situation, these directions should not be changed.

2. Care should be taken to explain to students that they are not being graded, but they should do their best.

3. During the inventory completion, the administrator should walk around the room checking to see that the students are following the procedures correctly. The students should have nothing on their desks except the inventory booklets and pencils.

4. In response to questions about whether students should guess, say:

> TRY TO ANSWER EVERY QUESTION. IF YOU ARE UNCERTAIN ABOUT AN ANSWER, SELECT THE ONE ALTERNATIVE YOU FEEL IS MOST NEARLY CORRECT.

5. Questions raised concering the specific content of the item should not be answered by the administrator, except to clarify or define the meaning of words the students do not understand.

6. If testing is done in two or more sessions, the administrator should follow the "Specific Directions" (Part 2-B) in each testing session in order to reorient the students to the answering procedure.

7. If testing is done in two or more sessions, the administrator should collect the inventory booklets systematically for each row or table, to facilitate redistribution in the next session, provided the students occupy the same seats.

8. If testing is done in two or more sessions, the students will use the same booklets in each session. Therefore, the administrator should make sure each student receives his or her own booklet in each session. The administrator should ask the students to check their names on the booklets to see that they have their own booklets.

B. Specific Directions for the Administration of the Inventory

1. When all students have been seated, say:

> YOU ARE GOING TO RECEIVE A BOOKLET ON CAREER DEVELOPMENT. DO NOT OPEN THE BOOKLET UNTIL I TELL YOU TO DO SO.

2. Now distribute the booklets and say:

> THE STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY IS EXACTLY WHAT THE TITLE SUGGESTS: AN INVENTORY OF YOUR GROWTH IN AREAS WHICH CONTRIBUTE TO CAREER DEVELOPMENT. THIS IS NOT A TEST. IT IS AN INVENTORY OF GROWTH IN FOUR AREAS WHICH RELATE TO CAREER DEVELOPMENT: SELF-REALIZATION, THAT IS, YOUR UNDERSTANDING OF YOURSELF; ECONOMIC EFFICIENCY, THAT IS YOUR UNDERSTANDING OF WHAT IT TAKES TO BE AN EFFECITVE PRODUCER OR CONSUMER OF GOODS AND SERVICES; SOCIAL RELATIONSHIPS, THAT IS, YOUR ABILITY TO GET ALONG WITH OTHERS; AND CIVIC RESPONSIBILITY, THAT IS, YOUR UNDERSTANDING OF THE RIGHTS AND RESPONSIBILITIES OF YOURSELF AND OTHERS. THE RESULTS OF THIS INVENTORY CAN HELP YOU IN ASSESSING YOUR CAREER DEVELOPMENT. DO NOT SPEND A GREAT DEAL OF TIME ON ANY ONE ITEM. DO NOT TALK OVER THE QUESTIONS WITH ANYONE ELSE. UNLESS THE ANSWER IS WHAT YOU THINK, IT WILL NOT REALLY HELP TO GIVE A TRUE PICTURE OF YOUR CAREER DEVELOPMENT.

3. Write the date, teacher's name, and school on the board and say:

> WRITE YOUR FIRST AND LAST NAME ON THE TOP LINE. ON THE NEXT LINE, GIVE YOUR GRADE, AGE AND SEX. THEN ON THE NEXT TWO LINES IN THE SPACES PROVIDED WRITE YOUR TEACHER'S NAME, OUR SCHOOL, AND TODAY'S DATE. TODAY IS _____.

Provide assistance if necessary.

4. After each student has completed this part, proceed by saying:

> NOW LOOK AT THE SECTION WHERE IT SAYS "DIRECTIONS," AND READ IT SILENTLY AS I READ THE DIRECTIONS ALOUD.
>
> DIRECTIONS: FOR EACH ITEM IN THIS INVENTORY SELECT THE WORD OR PHRASE THAT BEST COMPLETES THE STATEMENT, AND WRITE THE LETTER OF YOUR CHOICE, (a), (b), (c), or (d), ON THE LINE IN FRONT OF THE ITEM NUMBER.
>
> NOW LOOK AT THE EXAMPLE GIVEN.
>
> __c__ THE NUMBER OF MONTHS IN ONE YEAR IS
>
> (a) SEVEN
> (b) TEN
> (c) TWELVE
> (d) TWENTY
>
> THE BEST CHOICE IS TWELVE, SO THE LETTER __c__ IS WRITTEN ON THE LINE IN FRONT OF THE STATEMENT.
>
> ARE THERE ANY QUESTIONS? (PAUSE)

5. Emphasize that:

> NO QUESTION SHOULD BE LEFT UNANSWERED. FOR EACH QUESTION ONLY ONE ANSWER MUST BE CHOSEN. IF A MISTAKE IS MADE IT MUST BE ERASED COMPLETELY. WRITE YOUR ANSWER HEAVY AND CLEAR.

Make sure that everybody understands the answering procedures.

6. Then say:

> TODAY YOU ARE GOING TO ANSWER ITEMS NUMBER ____ TO NUMBER ____. AFTER YOU HAVE ANSWERED ALL THE QUESTIONS, CLOSE YOUR BOOKLETS AND LEAVE THEM ON YOUR DESKS.

The administrator should provide the numbers in the box above from the segment of the inventory which is going to be completed in that session.

7. Then say:

> YOU MAY NOW BEGIN WORK ON THE INVENTORY STARTING WITH ITEM NUMBER _____.

Please provide the number.

8. If testing is done in two or more sessions, at the end of the session conclude by saying:

> THIS IS THE END OF THIS PART OF THE INVENTORY. WE WILL CONTINUE WITH THE NEXT PART IN THE NEXT SESSION. THE TIME FOR THE NEXT SESSION IS _____.

Please provide the time of the next session.

C. Directions for Scoring

For scoring uses the Scoring Key Form D. The inventory is made up of 4 parts. Each part includes 25 items, and measures achievement of objectives implementing one of the four goals of career development. Part 1 includes items 1 to 25. Part 2 includes items 26 to 50. Part 3 includes items 51 to 75. Part 4 includes items 76 to 100. Give one point for each correct answer. Maximum score for each part will be 25 points, and for the whole inventory it will be 100 points.

SCORING KEY

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM D

Item	Answer	Item	Answer	Item	Answer	Item	Answer
1	d	26	b	51	d	76	c
2	b	27	d	52	b	77	c
3	c	28	d	53	d	78	a
4	a	29	a	54	a	79	d
5	c	30	a	55	a	80	c
6	b	31	d	56	b	81	a
7	a	32	b	57	c	82	d
8	c	33	b	58	a	83	b
9	a	34	a	59	c	84	d
10	b	35	c	60	d	85	d
11	b	36	d	61	d	86	b
12	d	37	a	62	a	87	a
13	d	38	d	63	b	88	c
14	c	39	c	64	a	89	b
15	c	40	c	65	c	90	a
16	d	41	b	66	c	91	c
17	c	42	b	67	a	92	a
18	b	43	d	68	b	93	b
19	b	44	b	69	d	94	d
20	a	45	a	70	c	95	a
21	d	46	c	71	d	96	c
22	b	47	b	72	b	97	d
23	d	48	c	73	a	98	c
24	c	49	b	74	a	99	a
25	b	50	a	75	c	100	d

Part 3

Inventory Interpretations

The SGACDI has been developed to assess student growth in four areas: self-realization, economic efficiency, social relationships, and civic responsibility. The inventory is designed to measure the extent to which objectives of the Hawaii Career Development Continuum have been achieved; and to provide information to assist counselors and teachers in designing new or improving existing programs to meet student needs. The inventory items have been constructed to measure achievement in relation to the 4 goals, 24 subgoals and implementing learner objectives of the Hawaii Career Development Continuum. There are 6 subgoals to each goal as shown in Table 1.

Table 1

Major Goals and Subgoals

Goals	Subgoals
Self-Realization	1. Acquire skills of self-appraisal.
	2. Develop awareness and understanding of self.
	3. Develop understanding of decision-making process.
	4. Acquire skills of decision-making, risk taking, value clarification, and goal getting.
	5. Develop understanding of the relationship between work and life style.
	6. Develop appreciation for individual differences in interests, values, aptitude, skills, abilities, attitudes.
Economic Efficiency	1. Develop understanding of variety of occupations, interrelationship of occupations, and knowledge of occupational classifications and job descriptions.
	2. Develop understanding that occupations exist for a purpose and contribute to the dignity of the individual.
	3. Develop appreciation for the value of work, its contribution to society and the economy, and appreciate that work means different things to different people.
	4. Develop understanding that new occupations develop in response to needs of society.
	5. Develop employability skills.
	6. Develop understanding of the relationship between education and work.
Social Relationships	1. Develop interpersonal skills.
	2. Develop understanding of social roles.
	3. Develop understanding of cooperation.

	4.	Develop understanding of community workers.
	5.	Develop appreciation for flexibility and adaptability in social relationships.
	6.	Develop understanding of interrelatedness of occupational roles.
Civic Responsibility	1.	Develop understanding of rights, privileges, and responsibilities on the job, in the home, in the community.
	2.	Develop understanding of ways in which participation in civic groups contributes to individual and group goals.
	3.	Develop understanding of importance of rules in society.
	4.	Develop understanding of relationships between responsibilities and rewards in work and leisure.
	5.	Develop capabilities for making effective use of resources and understand relation of environment to work.
	6.	Develop ability to participate in various kinds of civic groups.

There are four items for each subgoal. These items relate to the learner objectives for the subgoal, as shown in Table 2. Items 1 to 24 test the achievement of the Self-Realization Subgoals. Items 26 to 49 test the achievement of the Economic Efficiency Subgoals. Items 51 to 74 test the Social Relationships Subgoals. Items 76 to 99 test the achievement of Civic Responsibility Subgoals. Items 25, 50, 75, and 100 are repeated items for checking reliability. A reliability check can be made by comparing responses to the following items: Items 25 and 6, 50 and 29, 75 and 59, 100 and 81. The dash marks in Table 2 imply that there were no objectives for the corresponding items, but that the items were constructed according to the subgoal or the one single objective if available for that subgoal.

Table 2

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM D

Distribution of Items (I) According to
Goals (G), Subgoals (SG) and Objectives (O)

I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.	I.	G.	SG.	O.
	(SR)				(EE)				(SR*)				(CR)		
1	1	1	1	26	2	1	1	51	3	1	1	76	4	1	1
2	1	1	1	27	2	1	-	52	3	1	1	77	4	1	-
3	1	1	1	28	2	1	-	53	3	1	2	78	4	1	-
4	1	1	2	29	2	1	-	54	3	1	2	79	4	1	-
5	1	2	1	30	2	2	1	55	3	2	1	80	4	2	1
6	1	2	1	31	2	2	-	56	3	2	-	81	4	2	-
7	1	2	1	32	2	2	-	57	3	2	-	82	4	2	-
8	1	2	2	33	2	2	-	58	3	2	-	83	4	2	-
9	1	3	1	34	2	3	1	59	3	3	1	84	4	3	1
10	1	3	1	35	2	3	1	60	3	3	-	85	4	3	-
11	1	3	2	36	2	3	2	61	3	3	-	86	4	3	-
12	1	3	2	37	2	3	2	62	3	3	-	87	4	3	-
13	1	4	1	38	2	4	1	63	3	4	1	88	4	4	1
14	1	4	1	39	2	4	-	64	3	4	-	89	4	4	-
15	1	4	2	40	2	4	-	65	3	4	-	90	4	4	-
16	1	4	2	41	2	4	-	66	3	4	-	91	4	4	-
17	1	5	1	42	2	5	1	67	3	5	1	92	4	5	1
18	1	5	1	43	2	5	1	68	3	5	1	93	4	5	-
19	1	5	2	44	2	5	2	69	3	5	2	94	4	5	-
20	1	5	3	45	2	5	2	70	3	5	2	95	4	5	-
21	1	6	1	46	2	6	1	71	3	6	1	96	4	6	1
22	1	6	1	47	2	6	-	72	3	6	-	97	4	6	-
23	1	6	2	48	2	6	-	73	3	6	-	98	4	6	-
24	1	6	2	49	2	6	-	74	3	6	-	99	4	6	-
25	1	2	1	50	2	1	-	75	3	3	1	100	4	2	-

Note. SR = Self-Realization
EE = Economic Efficiency
SR* = Social Relationships
CR = Civic Responsibility

APPENDIX J

STUDENT GROWTH ASSESSMENT OF CAREER DEVELOPMENT INVENTORY - FORM D

Student's Name_____

Grade_____ Age_____ Sex: Male Female

Teacher's Name_____

School_____ Date_____

The Student Growth Assessment of Career Development Inventory is exactly what the title suggests: an inventory of your growth in areas which contribute to career development. This is not a test. It is an inventory of growth in four areas which relate to career development: Self-Realization, that is, you understanding of yourself; Economic Efficiency, that is, your understanding of what it takes to be an effective producer or consumer of goods and services; Social Relationships, that is, your ability to get along with others; and Civic Responsibility, that is, your understanding of the rights and responsibilities of yourself and others. The results of this inventory can help you in assessing your career development. Do not spend a great deal of time on any one item. Do not talk over the questions with anyone else. Unless the answer is what you think, it will not really help to give a true picture of your career development.

DIRECTIONS: For each item in this inventory select the word or phrase that best completes the statement, and write the letter of your choice--(a), (b), (c), or (d)--on the line in front of the item number.

Example: __c__ 1. The number of months in one year is
(a) seven
(b) ten
(c) twelve
(d) twenty

The best choice is twelve, so the letter c is written on the line in front of the statement.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO

Do Not Write Below This Line

PART	ITEMS	GOAL MEASURED	POSSIBLE SCORE	ACTUAL SCORE
1	1-25	Self-Realization	25	
2	26-50	Economic Efficiency	25	
3	51-75	Social Relationships	25	
4	76-100	Civic Responsibility	25	
		Total	100	

INVENTORY FORM D

Part 1

d 1. To communicate effectively with different people in various situations and various positions it is necessary for a person
   (a) to have a loud voice
   (b) to have access to a microphone
   (c) to be acquainted with them
   (d) to have the necessary vocabulary

b 2. Among the following pairs of persons, the pair who probably can communicate best with each other is
   (a) electrical engineer and geologist
   (b) psychologist and social worker
   (c) psychiatrist and archeologist
   (d) botanist and neurologist

c 3. Among the following pairs of workers, the pair who probably can communicate most easily with each other in their work is
   (a) surgeon and architect
   (b) crane operator and radio operator
   (c) zoologist and neurologist
   (d) bookkeeper and bookseller

a 4. One would choose a future occupation according to existing opportunities and one's own
   (a) values, interests, and desired lifestyle
   (b) values, interests, and religious affiliation
   (c) attitude, ability, and ethnic background
   (d) racial, cultural, and religious background

c 5. A person who has a liking for figures and calculation would do well as
   (a) a machinist
   (b) a typist
   (c) a bookkeeper
   (d) a pharmacist

b 6. A person who is interested in creative work would likely do well as
   (a) a plumber
   (b) an architect
   (c) a doctor
   (d) an engineer

a 7. A person who likes to help people with their emotional and personal problems would likely do well as
   (a) a social worker
   (b) a medical doctor
   (c) a librarian
   (d) a policeman/woman

c 8. Maximizing one's potential in daily life means
   (a) devoting yourself to many necessary and unnecessary things
   (b) doing many things that you both desire and do not desire
   (c) planning to make best use of one's talents
   (d) going through an intense program of physical fitness

a 9. Once one makes a decision one should
   (a) accept the consequences even if they don't live up to expectations
   (b) accept the consequences only if they are desirable
   (c) place blame for the consequences on others
   (d) deny making the decision if it turns out badly

b 10. A person who is responsible
   (a) welcomes taking risks
   (b) accepts the outcome of his or her action
   (b) saves face by denying failure
   (d) accepts only the good parts of his or her action

b 11. In any life career decision the element of chance is involved
   (a) never
   (b) always
   (c) seldom
   (d) randomly

d 12. One of the best reasons for choosing a career is
   (a) to be well liked
   (b) to buy a car
   (c) to get away from home
   (d) to be useful

d 13. In making a career decision one of the first things to do is
   (a) check working conditions
   (b) compare opportunities
   (c) consider benefits
   (d) set goals

c 14. A personal factor which might influence the choice of a career yet be beyond a person's control would be
   (a) educational preparation
   (b) skill acquisition
   (c) physical limitations
   (d) employment opportunity

c 15. A person who has completed high school would be able to work as
   (a) an electronic technician
   (b) a computer programmer
   (c) a bus driver
   (d) a nurse

d 16. A person who wants to become an engineer must have
(a) a high school diploma with courses in mechanical drawing
(b) one or two years of community college or vocational training
(c) a high school diploma with courses in industrial arts
(d) four or five years of college with courses in math and physics

c 17. One who values power and wants to have influence over others would likely choose to be
(a) a professor
(b) a pilot
(c) a politician
(d) a painter

b 18. A person who likes to travel and change work location might choose to be
(a) a dentist
(b) an archeologist
(c) a veterinarian
(d) a barber

b 19. One who enjoys working <u>outdoors</u> might choose to be
(a) a plumber
(b) a mail carrier
(c) a janitor
(d) a carpenter

a 20. The one who is most likely to change lifestyles when given a promotion is
(a) a diplomat
(b) a geologist
(c) a bus driver
(d) a pilot

d 21. A person with a negative self-image would most likely
(a) be highly active in many social organizations
(b) be highly ambitious and assertive
(c) show more respect for self than for others
(d) tend to blame self rather than others for mistakes

b 22. People have feelings of dignity and worth
(a) for the same reasons
(b) for different reasons
(c) for no reason
(d) for selected reasons

__d__ 23. One way to differentiate between yourself and another person is to see
   (a) what things both of you can do
   (b) what things both of you cannot do
   (c) what things both of you can and cannot do
   (d) what things one of you can do but the other one cannot do

__c__ 24. One can compare personalities of two persons best by comparing their
   (a) age, race, and religion
   (b) height, weight, and size
   (c) values, abilities, and attitudes
   (d) date of birth, place of birth, and income

__b__ 25. One who is interested in creative work would likely do well as
   (a) a plumber
   (b) an architect
   (c) a doctor
   (d) an engineer

Inventory Form D (continued)

Part 2

b 26. Office occupations include
(a) waiter, waitress, cook, cashier
(b) bookkeeper, secretary, bill collector, clerk
(c) dancer, actor, singer, comedian
(d) personal manager, economist, engineer, statistician

d 27. Fine arts and humanities occupations include
(a) nurse, doctor, lawyer, pharmacist
(b) mailman/woman, fireman/woman, bus driver, policeman/woman
(c) machinist, carpenter, plumber, electrician
(d) artist, poet, sculptor, musician

d 28. The jobs least related to each other are
(a) dancer, actor, singer, musician
(b) banker, insurance adjuster, teller, broker
(c) house builder, road worker, heavy equipment operator, electrician
(d) architect, artist, archeologist, astronomer

a 29. A construction worker's job is most closely related to that of
(a) an architect
(b) a banker
(c) a machinist
(d) an auto mechanic

a 30. Sanitation workers probably increase their feelings of personal dignity because
(a) their work is essential
(b) the hours or work are flexible
(c) the rate of pay is very high
(d) their work develops physical fitness

d 31. Most governors' secretaries feel pride in their work because
(a) they work in plush surroundings
(b) they meet important people
(c) the hours are flexible
(d) the governor's position is important to the state

b 32. The meter reader develops a feeling of worth because
(a) the work is largely outdoors
(b) the city's income depends partly upon the work
(c) the hours are very flexible
(d) the work involves some travel

b 33. The long distance telephone operator develops feelings of self-satisfaction because
(a) the hours change from time to time
(b) the work provides service to others
(c) the fringe benefits are extraordinary
(d) the conversations are interesting to overhear

a 34. The worker whose service all of us receive almost every day is
(a) mailman/woman
(b) doctor
(c) pharmacist
(d) bus driver

c 35. The worker whose service is likely to be least urgently needed by the community is the
(a) bus driver
(b) policeman/woman
(c) social worker
(d) sanitation worker

d 36. An occupation from which a person might make either a lot of money or very little money is
(a) a librarian
(b) a secretary
(c) a professor
(d) a singer

a 37. If a person chooses to work for the Salvation Army or the Goodwill Industries, one can probably assume that money
(a) means very little to him or her
(b) means a great deal to him or her
(c) is the root of all evil
(d) has always been a problem

d 38. New occupations emerge because
(a) young people do not like to do old jobs
(b) some people are always interested in new jobs
(c) people get tired of doing old jobs over and over
(d) new needs develop in the society

c 39. The employment outlook of an occupation refers to
(a) where workers are located
(b) where workers are watched from outside
(c) future employment opportunities
(d) whether workers can look at outside activities

c 40. An expansion in the oil industry very likely would increase demand most for
(a) industrial engineers
(b) aeronautical engineers
(c) petrochemical engineers
(d) electrical engineers

b 41. An expansion in the space industry very likely would increase the need most for
(a) chemists
(b) physicists
(c) biochemists
(d) architects

b 42. When many people apply for a particular job, the employer will likely pick the one having
(a) the most education
(b) the best job qualifications
(c) the greatest economic need
(d) the greatest mental ability

d 43. The worker hardest hit by unemployment is likely to be the
(a) semi-skilled worker
(b) craftsman
(c) professional person
(d) unskilled worker

b 44. A person getting an entry-level job would need to be able to demonstrate
(a) interpersonal skills
(b) employability skills
(c) communication skills
(d) mathematical skills

a 45. A worker <u>most</u> capable of entering a job requiring work with data would be
(a) a statistician
(b) an electrician
(c) a radio operator
(d) a computer operator

c 46. To be able to work as a newspaper reporter one has to study
(a) English
(b) philosophy
(c) journalism
(d) sociology

b 47. A hotel manager would be wise to study
(a) civil service
(b) business administration
(c) home economics
(d) bookkeeping

c 48. One who has studied the uses and compositions of medicines is called
(a) a chemist
(b) a dietician
(c) a pharmacist
(d) a nutritionist

b 49. The person most likely to need a college degree would be
(a) a folk singer
(b) music professor
(c) piano teacher
(d) a rock musician

__a__ 50. A construction worker's job is most closely related to that of
(a) an architect
(b) a banker
(c) a machinist
(d) an auto mechanic

Part 3

__d__ 51. A good employer-employee relationship would be one based on
(a) impersonal interaction
(b) mutual non-interaction
(c) completely formal interaction
(d) personal interaction

__b__ 52. In order to keep a friend, it is important to be
(a) impulsive
(b) understanding
(c) dominant
(d) secretive

__d__ 53. If one cannot get from others what one needs, the best thing to do is
(a) to demand it from people
(b) to take it from people by force
(c) to steal it from people if necessary
(d) to remain patient and calm

__a__ 54. In all job interviews it is important to have good
(a) social skills
(b) computation skills
(c) mechanical skills
(d) psychomotor skills

__a__ 55. A social role which is important to most high school seniors is that of
(a) student
(b) child
(c) employee
(d) athlete

__b__ 56. The way a person behaves at any particular time depends largely on
(a) the time of year
(b) the group you are in
(c) the talents you have
(d) the place you are born

__c__ 57. A person's behavior is determined largely by others when the person
(a) rides a bicycle
(b) becomes a pilot
(c) joins a club
(d) watches T.V.

__a__ 58. A person has an expected way to behave if the person
(a) joins the basketball team
(b) goes swimming alone
(c) watches T.V.
(d) does homework

c 59. Participating in a group activity means working
(a) independently
(b) competitively
(c) cooperatively
(d) impersonally

d 60. Participating in a group activity requires
(a) following your own rules
(b) helping others if one feels like it
(c) avoiding being dependent on others
(d) following the rules of the group

d 61. In any group situation it is important for the members to
(a) try to get recognition
(b) do the tasks alone
(c) ignore the rules
(d) be willing to give and take

a 62. When a team cooperates on a project, the result is most likely to be
(a) creative and innovative
(b) conventional and correct
(c) limited and conforming
(d) traditional and sterile

b 63. A policeman needs to be above average in
(a) verbal aptitude
(b) interpersonal skills
(c) computation skills
(d) spatial aptitude

a 64. Public service occupations include
(a) fireman/woman, policeman/woman, bus driver, mailman/woman
(b) banker, broker, barber, baker
(c) nurse, doctor, lawyer, engineer
(d) stenographer, stockbroker, file clerk, typist

c 65. The fireman/woman needs to be above average in
(a) verbal aptitude
(b) spatial ability
(c) physical agility
(d) interpersonal skills

c 66. The sanitation worker needs to be above average in
(a) finger dexterity
(b) verbal aptitude
(c) physical strength
(d) quantitative aptitude

a 67. Where the rules of a game are changed, it is most important for the players to
(a) play by the new rules
(b) memorize the new rules
(c) forget the old rules
(d) try to regain the old rules

b 68. The expected behavior of a person would change most from
(a) one high school to another high school
(b) kindergarten to junior high school
(c) one job to another related job
(d) one city to another city

d 69. A person who has many roles is likely to become more
(a) rigid
(b) disoriented
(c) unstable
(d) flexible

c 70. A person who belongs to many social groups is likely to become more
(a) intelligent
(b) stable
(c) adaptable
(d) efficient

d 71. One value from being in a group is that members
(a) have interpersonal competition
(b) do things alone
(c) have control over each other
(d) appreciate contributions of others

b 72. Being a member of a group makes one have a feeling of
(a) disorientation
(b) belonging
(c) frustration
(d) enthusiasm

a 73. Being a member of a group will likely give you
(a) an insight into your abilities
(b) a relief from working
(c) a false sense of security
(d) a feeling of dependency

a 74. One of the benefits of belonging to a school club is that it
(a) contributes to social skills
(b) helps meet financial needs
(c) develops physical skills
(d) develops independence

__c__ 75. To participate effectively in a group activity, one must work

(a) independently
(b) competitively
(c) cooperatively
(d) impersonally

Part 4

c 76. Of the following, the one which is <u>not</u> a civic group is
(a) Lion's Club
(b) Life of the Land
(c) Board of Regents
(d) League of the Women Voters

c 77. When you accept a job, you commit yourself to certain
(a) rights
(b) privileges
(c) responsibilities
(d) rewards

a 78. One who often fails to fulfill his or her job responsibilities will likely be regarded by others as
(a) unreliable
(b) careless
(c) forgetful
(d) lax

d 79. One should complete one's job assignment
(a) only if the pay is good
(b) only if the work load is not heavy
(c) only if one enjoys it
(d) even if the working conditions are poor

c 80. The purpose of having a labor union is
(a) to keep laborers under surveillance
(b) to increase companies' profits
(c) to protect the rights of the workers
(d) to fight organized crime

a 81. A civic action group is often for the purpose of
(a) promoting the legal interests of certain groups
(b) organizing individuals against society
(c) disrupting the normal process of social activities
(d) aiding the exploitation of one group by another

d 82. A civic organization gives one an opportunity to
(a) lose one's civil liberties
(b) disrupt the process of social movements
(c) become disassociated from the community
(d) contribute to community improvement

b 83. The members participating in a civic group most likely will
(a) work for individual goals
(b) share common goals
(c) have different goals
(d) not be concerned about goals

d 84. When parliamentary procedures are followed to conduct a union meeting, a motion should be voted on
(a) only if it has been tabled
(b) without being seconded
(c) only if it has a third
(d) only if it has been seconded

d 85. A civic group works best when it is based on a system of
(a) communication, coordination, intercompetition
(b) concealment, coordination, mutual opposition
(c) coordination, concealment, cooperation
(d) communication, coordination, cooperation

b 86. A civic group is least likely to provide
(a) a system of hierarchy
(b) a system of competition
(c) a mutual decision-making process
(d) a system of communication

a 87. Disputes between labor and management over wages are best settled by
(a) negotiations between both groups
(b) negotiations by management
(c) declaration by the workers
(d) work slowdown by labor

c 88. Social security contributions are withheld from wages to
(a) support the government
(b) contribute to the community
(c) help support retired people
(d) help support employment agencies

b 89. To support oneself and one's family, one needs to be skilled in
(a) communicating with others
(b) managing money
(c) applying for credit
(d) buying antiques and artwork

a 90. One advantage of being self employed is that a person most likely will have
(a) more freedom
(b) more security
(c) more stability
(d) more traveling

c 91. The best way to keep a balanced budget is to
(a) make more money
(b) declare bankruptcy
(c) plan expenditures in advance
(d) buy only on installment

a 92. Conservation of resources refers to
(a) controlled use of resources
(b) concentrating resources in heavy industries
(c) producing the most goods
(d) using resources to meet human needs

b 93. The worker who will be least affected by an energy crisis is
(a) an air pilot
(b) an architect
(c) a truck driver
(d) an electrician

d 94. A worker whose occupation will likely be most affected by an energy crisis is
(a) an astronomer
(b) a surveyor
(c) a tool designer
(d) a bus driver

a 95. The study of the relationships between living organisms and their environment is called
(a) ecology
(b) zoology
(c) sociology
(d) geology

c 96. Team efforts often
(a) hinder task completion
(b) create conflicts among team members
(c) facilitate task completion
(d) result in wasteful use of resources

d 97. Keeping the environment clean can be achieved best through the efforts of
(a) sanitation workers only
(b) all people with motor vehicles
(c) sanitation workers and people with vehicles
(d) every person in the country

c 98. Preventive medicine requires the team efforts of
(a) doctor, zoologist, and medical secretary
(b) doctor, nurse, and receptionist
(c) doctor, biochemist, and x-ray technician
(d) pharmacist, psychologist, and patient

a 99. In order to achieve goals for the common good, it is important for people to
(a) work together cooperatively
(b) work on tasks competitively
(c) work on tasks independently
(d) work together conservatively

d 100. A civic organization is usually for the purpose of
(a) exploitation of one group by another group
(b) disrupting the normal process of social activities
(c) organizing individuals against society
(d) promoting the legal rights of certain groups